FEBRUARY 1995

Market Due Diligence for ServiceTec

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Introduction

A
Objectives and Scope

This due diligence study was conducted by INPUT with the following specific aims:

- Provision of market sizing analyses for the independent maintenance business (the business within which ServiceTec operates) based on INPUT's existing and continuous coverage of the overall customer services business. In particular a review of the UK and Dutch markets for independent maintenance including commentary on key trends influencing the market with particular focus on sectors served by ServiceTec
- Identification of the competitive environment within which ServiceTec operates, identifying named competitors and highlighting their relative strengths and weaknesses. An evaluation of ServiceTec's overall competitive positioning in relationship to other industry firms and the threats they may pose to ServiceTec's future business
- A critique of the proposed sale plan for the business as prepared by Geoff Henderson.

B
Methodology

INPUT prepared this study on the basis of the following analyses:

- A compilation and extraction of relevant INPUT research concerning the maintenance market in Europe
- An evaluation of documents provided by Phildrew Ventures and Geoff Henderson relating to ServiceTec

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- A presentation by Geoff Henderson of his strategic plan for the revitalisation of ServiceTec on the 31st January 1995.

C
Report Structure

The remaining sections of this report are structured as follows:

- Chapter II contains an executive overview based on the presentation material provided to Phildrew Ventures
- Chapter III provides an overview of the European maintenance market and the major forces driving its development
- Chapter IV explains INPUT's view of the customer services market, and provides detailed definitions of service sectors and vendor delivery modes
- Chapter V provides the market assessments for the customers services business in both the UK and the Netherlands markets
- Chapter VI provides profiles of independent maintenance firms to provide background enrichment to an understanding of ServiceTec
- Appendix A provides the economic assumptions used in sizing and forecasting the customer services sectors.

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II

Executive Overview

This executive overview contains a summary of the key results of the market due diligence conducted for Phildrew Ventures by INPUT on ServiceTec.

The three areas which INPUT were asked to review and comment on are listed in Exhibit II-1.

Exhibit II-1

Market Due Diligence for ServiceTec

Market Due Diligence ServiceTec
• Market opportunity and key trends
• Competitive environment and positioning
• Business plan critique

Source: INPUT

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The key objectives for Phildrew Ventures underlying the analysis of these three areas are:

- Establish whether projected sales growth is sustainable in current and future market conditions
- Establish whether competitive positioning will sustain projected margins.

INPUT's role has been to conduct market due diligence on the basis of on-going knowledge and experience of the maintenance industry and market. ServiceTec is reviewed in this document in the light of its likely market prospects and competitive positioning and standing.

A
Market Opportunity

Three areas were covered in this section:

- UK maintenance market
- The Netherlands maintenance market
- Key trends affecting these maintenance markets.

1. UK Maintenance Market

INPUT's estimates of total IT services growth are provided in Exhibit II-2 in order to place the UK maintenance market within its overall context.

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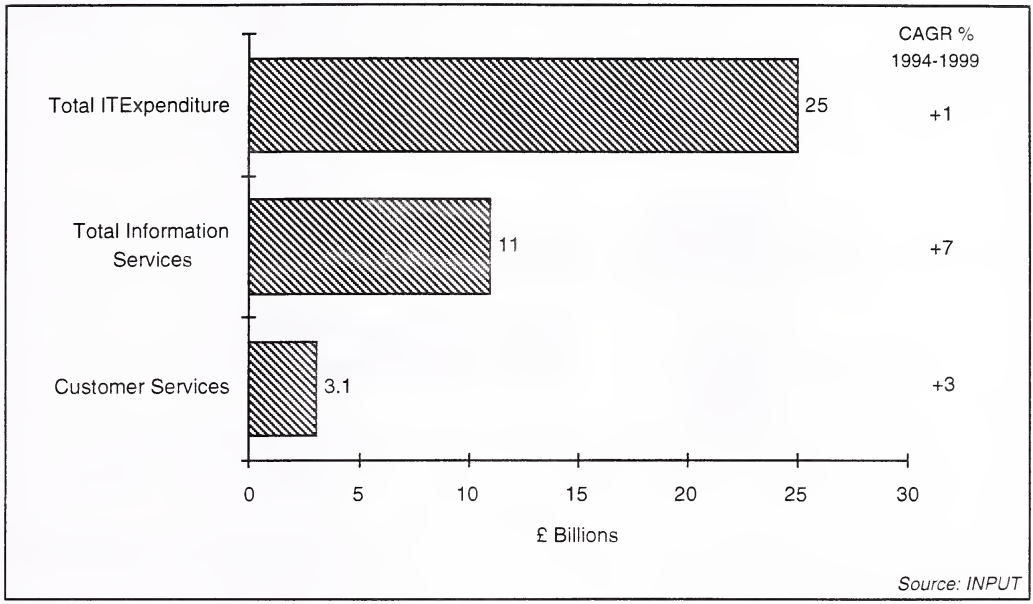
Exhibit II-2

UK IT Market 1994



Source: INPUT

The principal characteristics of the users' expected IT spending pattern are thus shown to be:

- Containment of the spending on IT in total, as users search for the delivery of value from their IT investments and operational expenditures
- A continuing fundamental shift of expenditure from *in-house* to *outsourced* services
- Only a low growth expectation in overall expenditure on product support and related functions (customer services) since these functions have nearly always been conducted by an external organisation.

Within the overall user expenditure on customer services (see detailed definitions of its components in Chapter III) the basic function of equipment services (maintenance) is expected to demonstrate steady decline as is indicated in Exhibit II-3.

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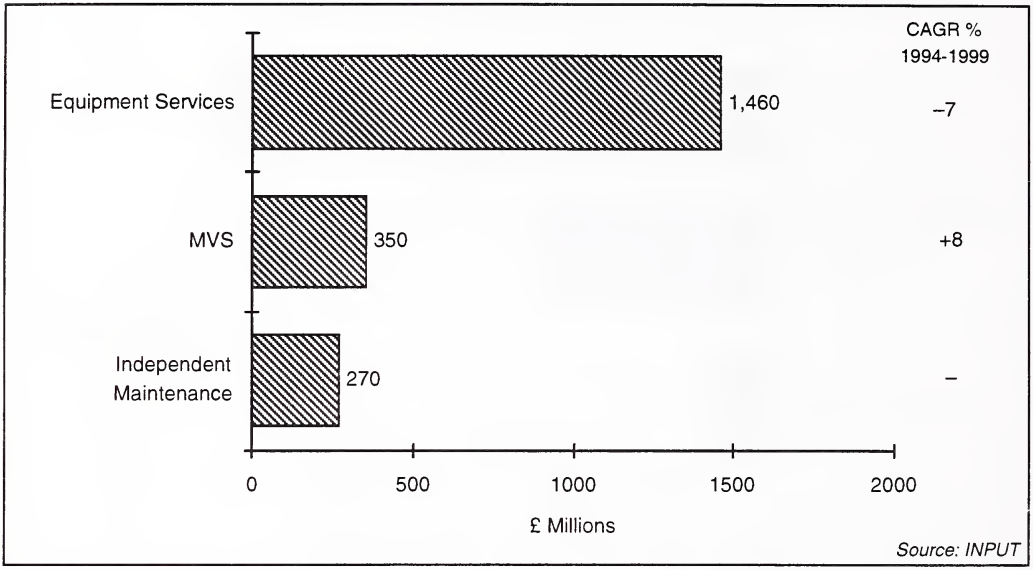
Exhibit II-3

UK Customer Services Market 1994



Overall growth in equipment maintenance services is being driven down for a number of reasons which are outlined in sub-section 3 below.

However, within this overall decline the *multi-vendor services* sector (MVS) is demonstrating relatively significant growth. This market sector is populated by the services arms of the equipment vendors and leading independent maintenance organisations often referred to as *third party maintenance* firms (TPMs), notably Granada Computer Services.

The share of the maintenance market overall held by the independents is expected by INPUT to remain broadly static within this sector.

The equipment services market can be viewed as being comprised of two important sub-divisions.

One part, in significant decline, is the supply of basic equipment support being driven down by increased reliability and product quality, as well as highly competitive market conditions.

The other part of the market, multi-vendor services, is demonstrating significant growth opportunities as already indicated. The majority of this

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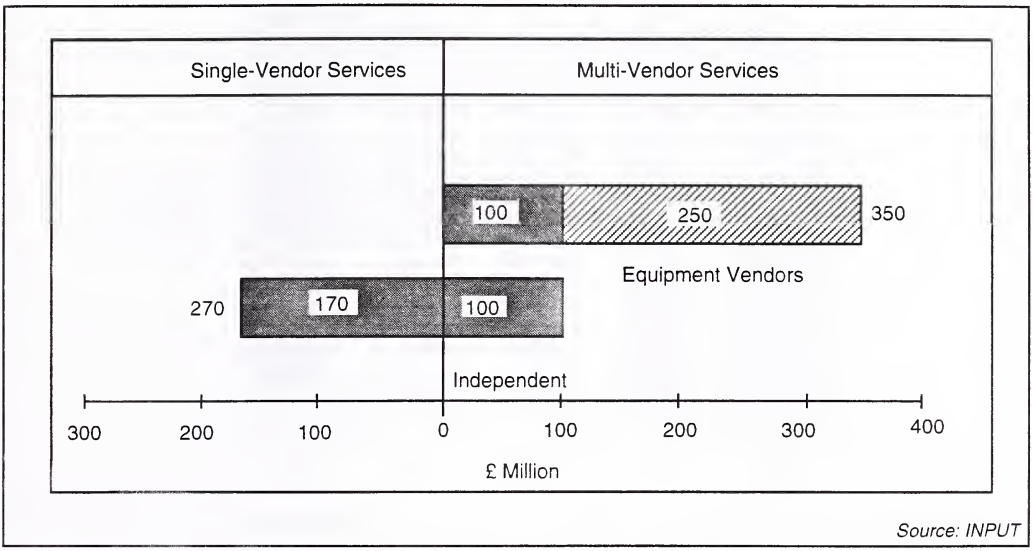
MVS market (over 70%) is accounted for by system vendors as can be seen in Exhibit II-4.

Exhibit II-4

UK Independent Maintenance Market 1994



Source: INPUT

Exhibit II-5 plots the projections made for ServiceTec under new mangement as a share of the overall market for independent maintenance in the UK, which as indicated earlier, is not expected to change significantly over the projected period.

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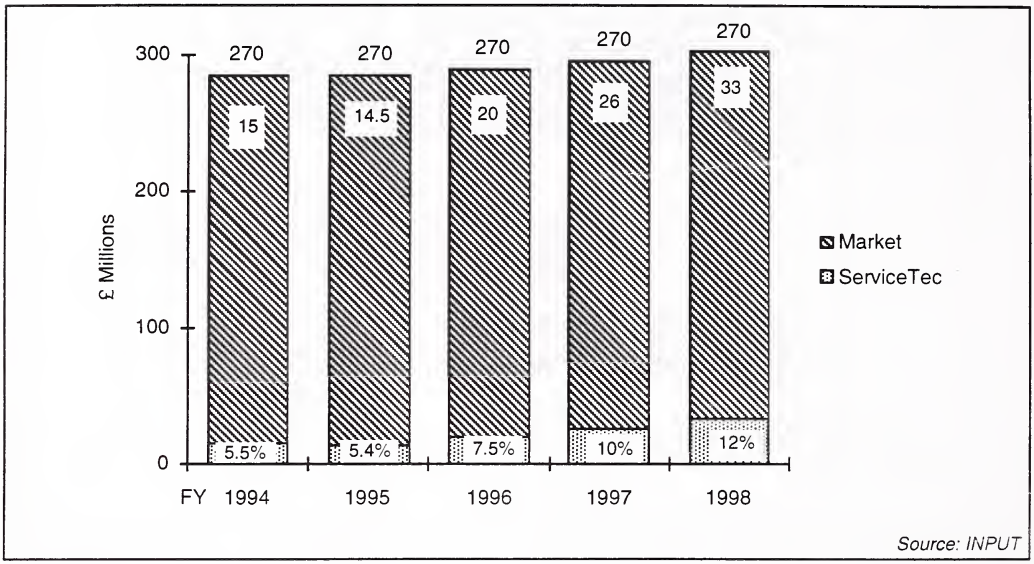
Exhibit II-5

UK Independent Maintenance Market



Source: INPUT

This analysis demonstrates that ServiceTec can achieve significant growth, as projected, and still only represent 12% of the market sector by 1998.

This result seems possible given INPUT's overall scenario of four to five players dominating the sector by the end of the decade.

2. The Netherlands Maintenance Market

Exhibit II-6 contains INPUT's estimates of total IT services growth in the Netherlands to provide a context for assessing the scale of the customer services market.

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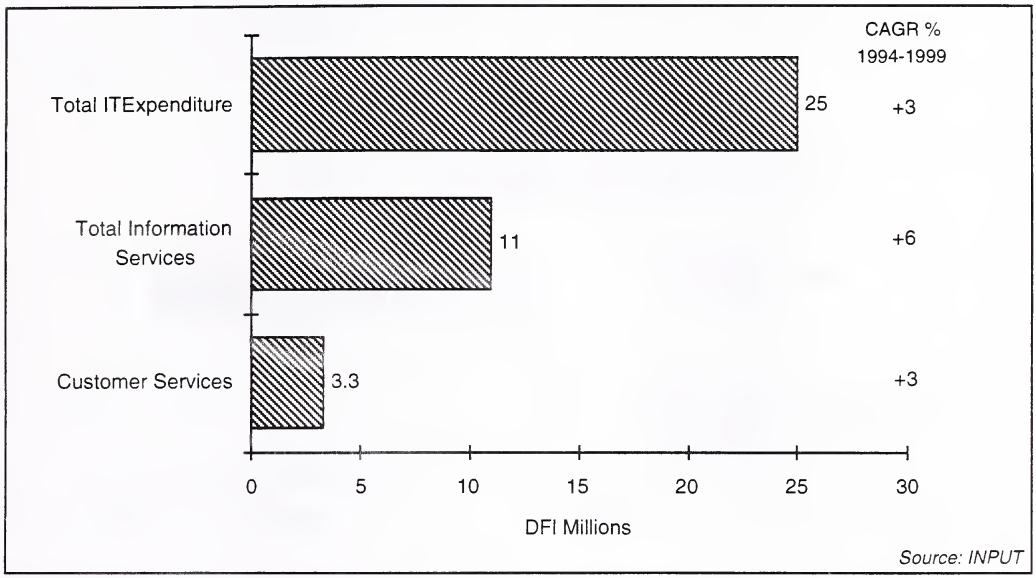
Exhibit II-6

The Netherlands IT Market 1994



Source: INPUT

Users expected IT spending patterns are broadly similar to those already discussed for the UK in the previous section. These include IT spending containment, outsourcing and low growth in overall expenditure on product support and related functions.

Within the overall user expenditure on customer services (see detailed definitions of its components in Chapter III) the basic function of equipment services (maintenance) is expected to demonstrate steady decline in the Netherlands as shown in Exhibit II-7.

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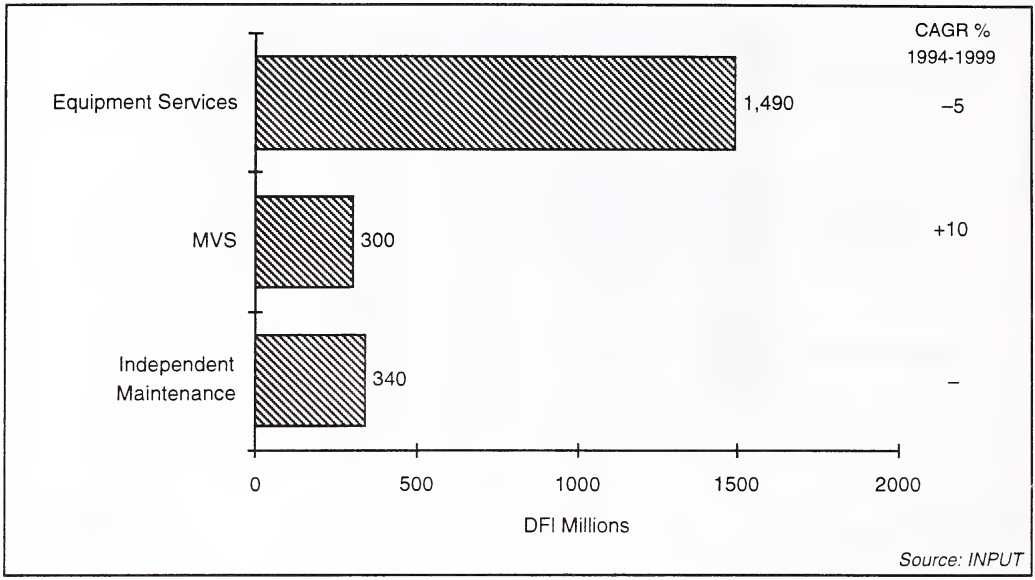
Exhibit II-7

The Netherlands Customer Services Market 1994



Source: INPUT

Overall growth in equipment maintenance services is being driven down for a number of reasons which are outlined in sub-section 3 below.

However, within this overall decline the *multi-vendor services* sector (MVS) is demonstrating significant growth in the Netherlands, stronger than in the UK.

The MVS market sector is populated primarily by the services arms of the equipment vendors and the leading independent maintenance firm in the Netherlands, Getronics.

The equipment maintenance market can be viewed as comprising two important sub-divisions as in the UK.

One part, in significant decline, is the supply of basic equipment support being driven down by increased reliability and product quality, as well as highly competitive market conditions.

The other part of the market, multi-vendor services, is demonstrating significant growth opportunities. The majority of this MVS market (over 70%) is accounted for by system vendors as is shown in Exhibit II-8.

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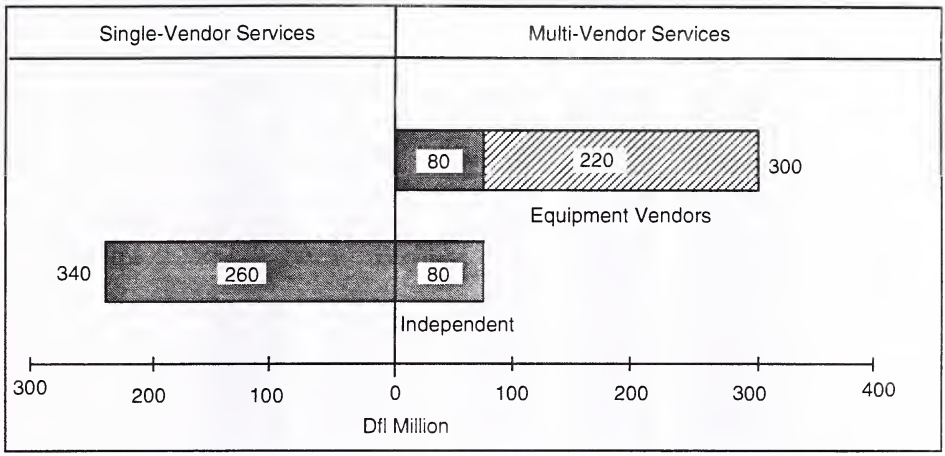
Exhibit II-8

The Netherlands Independent Maintenance Market 1994



Source: INPUT

Exhibit II-9 plots the projections made for ServiceTec under new mangement as a share of the overall market for independent maintenance in the Netherlands, which as indicated earlier, is not expected to change significantly over the projected period.

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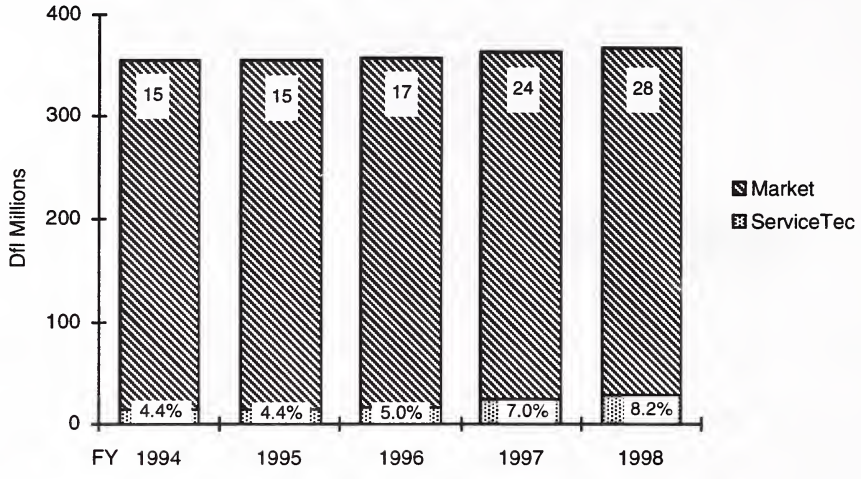
Exhibit II-9

The Netherlands Independent Maintenance Market



Source: INPUT

This analysis demonstrates that ServiceTec can achieve significant growth, as projected, and still only represent 8% of the market sector by 1998.

This result seems possible given INPUT's overall scenario of increasing concentration within the sector.

3. Key Maintenance Market Trends and Issues

The equipment maintenance business has been under constant pressure from improved technology for a number of years, serious erosion of the maintenance cost as a proportion of the hardware price became an issue for the industry as early as the late 1970s.

However, continuing strong growth in IT markets, and the inertia factor associated with the installed base of equipment, maintained this business throughout the 1980s.

Economic difficulties at the start of the 1990s and a drive by users to obtain value for money due to internal cost pressures have led to

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conditions of sustained decline in the market for equipment maintenance of IT equipment.

It should, however, be noted that the proliferation of IT within organisations and the increasing phenomena of embedded processing in other technology is opening up potentially unlimited opportunities for maintenance firms prepared to look beyond the strict limits of the IT industry. This area could be of significance to ServiceTec's future development.

Within the IT industry the key phenomena affecting the market for computer maintenance has been that of *multi-vendor maintenance* (MVS).

Individual components of IT systems have in some respects become simpler and more accessible, e.g. personal computers and workstations and shrink wrapped low cost software products.

However, the need for medium and large organisations to link these components together in compatible networks utilising a variety of equipment from different manufacturers has driven the need for service vendors to maintain a range of equipment at one site, consequently the phenomena of *multi-vendor services* has arisen.

It is important to recognise that MVS only implies more than *one* vendor, it should not necessarily be interpreted as the support of all equipment at one site often referred to by the phrase *one-stop shopping*.

The former concept is an important customer need, the latter a buzz phrase of limited applicability.

B
Competitive Environment and Positioning

This section describes the competitive environment in the independent customer services markets in the UK and in the Netherlands.

1. The UK Independent Customer Services Market

Exhibit II-10 lists the leading independent customer services vendors in the United Kingdom ranked by equipment services revenue.

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Exhibit II-10

The Leading UK Independent Maintainers 1994

Rank	Vendors	Estimated Sector Revenue (£ million)	Market Share (%)
1	Granada CS	75.0	27.8
2	ACT Network SI	15.0	5.5
3	ND Service Team	14.8	5.5
4	ServiceTec	14.4	5.3
5	FirstPoint	14.3	5.3
6	Digital CS	14.0	5.2
7	Computeraid	13.0	4.8
8	Kalamazoo	10.0	3.7
9	LCE	8.0	3.0
10	Systems Reliability	6.5	2.4
	Total Listed	185.0	68.5
	Total Market	270.0	100.0

Source: INPUT

The competitive scene amongst the independents clearly emerges from the analysis shown in this exhibit.

The market is dominated by Granada CS, followed at some distance by a bunch of medium sized firms including ServiceTec. Beyond this the industry rapidly descends into a highly fragmented collection of small niche firms that account for the 30% of the market outside the top ten.

2. The Netherlands Independent Customer Services Market

Exhibit II-11 lists the leading independent customer services vendors in the Netherlands ranked by equipment services revenue.

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Exhibit II-11

The Leading Independent Maintainers in the Netherlands 1994

Rank	Vendors	Estimated Sector Revenue (Dfl Million)	Market Share (%)
1	Getronics	240	70.6
2	Triple P	25	7.3
3	Thijssen	20	5.9
4	Granada CS	18	5.3
5	ServiceTec	16	4.7
	Total Listed	319	93.8
	Total Market	340	100.0

Source: INPUT

The competitive scene in the Netherlands amongst the independents clearly emerges from the analysis shown in this exhibit.

The market is even more clearly dominated by one vendor than is the UK market, Getronics having 70% of the market following an aggressive acquisition programme in Holland.

Getronics are followed at a considerable distance by four medium sized firms including ServiceTec. Beyond this the industry rapidly descends into a highly fragmented collection of marginal operations that account for the 12% of the market outside the leading five contenders.

C
Business Plan Critique

A review of Geoff Henderson's strategic assessment and plan for *new ServiceTec* reveals a set of key principals concerning the way he wants to run the company and management issues to be addressed in the execution of his strategy. These are listed in Exhibit II-12 and commented on below.

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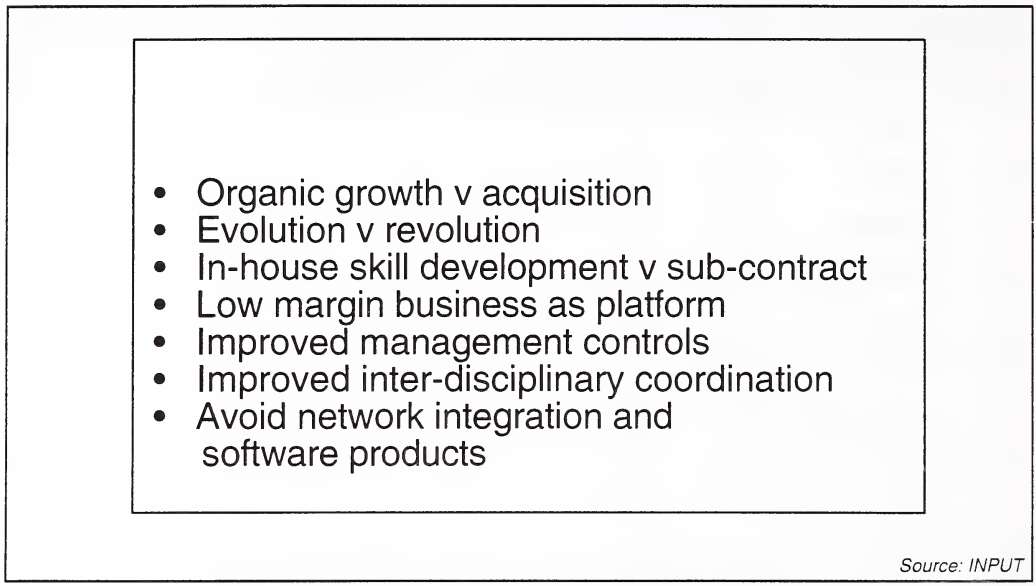
Exhibit II-12

Geoff Henderson's Fundamentals


• Organic growth v acquisition
• Evolution v revolution
• In-house skill development v sub-contract
• Low margin business as platform
• Improved management controls
• Improved inter-disciplinary coordination
• Avoid network integration and software products
Source: INPUT

1. Organic Growth

The proposed emphasis on organic rather than acquisition based growth is sound. Whilst we continue to expect to see further consolidation in this industry, Digital for example acquired 11 TPMs in 1994, new opportunities abound in account penetration for organisations geared up to recognise this potential.

2. Evolution

Whilst much is made of rapid growth and shortening product cycles within the IT industry a major factor holding up the maintenance market is the inertia contained in the installed base.

However fast technological change, organisations are increasingly dependent on people. Successful organisations leverage the motivations and skills of their people to achieve their strategic objectives.

An emphasis on evolving the skills and structures of ServiceTec in line with changes in the market is more likely to achieve success than

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acquisitions poorly integrated into the existing infrastructure. (ACT's demise, and fall into the hands-off Misys, could be cited as an examle of one acquisition too far.)

3. In-House Skill Development

The skills of the engineers, and of the way they are managed, and of the way logistics and other vital functions are managed are key determinants of success in the maintenance market.

Despite the increasing need to contemplate sub-contracting for fulfilling some elements of MVS contracts, the core skills in-house will be the ultimate test of a firm's capabilities.

Geoff recognises this vital requirement and has plans to support this.

4. Low Margin Business

Geoff's recognition that low margin business can play its part in the development of the company organically is an important one.

Critical size is increasingly important in the maintenance market as can be surmised by the vendor ranking tables shown in the previous sub-section.

Management controls need to ensure that low margin business is still actually making a *contribution*. If it does then leverage comes from spares holdings, geographic size and the number of engineers employed.

Clearly driving down overhead assists in making these contracts less marginal and this must be a priority for any maintenance company.

5. Management Controls

This point needs little comment. This point was commented upon in respect of *low margin business* in the precious sub-section.

6. Inter-Disciplinary Co-ordination

This management principal recognises the need for leverage within the organisation.

ServiceTec seems to have been run in a compartmentalised project fashion which will undoubtedly have failed to achieve any management cohesion or knowledge skills development amongst either the management or the engineers.

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Improved focus on the need to develop fully the human resources of the company is an important ingredient of future success.

7. Network Integration and Software Products

INPUT agrees wholeheartedly with Geoff's views on these areas.

It is a very seductive idea for maintenance firms to believe that they can solve their margin problems by making easy money on product delivery. This has proven to be of only short term assistance for firms financial results but long term financial failure.

Maintenance firms should stick to what they have the skills and management infrastructure to handle, namely *maintenance.*

Network integration in the context of ServiceTec means product delivery and should be avoided, it is a confusion factor.

Software support is a specialised area that is increasingly going to require special attention. Typically maintenance organisations have the wrong people to do this.

A distinction needs to be made between supporting the *physical* IT infrastructure and supporting the *logical* IT infrastructure of an organisation.

Companies like ServiceTec have skills and knowledge for the former not for the latter.

Clearly engineers need increasing knowledge of software in order to support equipment as software is increasingly embedded in devices.

There exist, however, a major distinction between this aspect and going fully into the software support arena.

8. Strengths/Weaknesses and Risk Factors

Exhibit II-13 provides a further analysis of some of the points covered above in terms of the current strengths and weaknesses of ServiceTec and risk factors associated with addressing the weaknesses in each area.

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Exhibit II-13

Strengths/Weaknesses/Risks

Issue	Strength/Weakness	Risk Factors
Facilities	• As the fourth largest TPM in the UK Stec is a sizeable firm and big enough to gaiin some economies here	• The effectiveness/speed with which New ServiceTec can fully leverage its facilities in order to reduce costs to a minimum – recognised by new management
Sills Inventory	• Good range of skills	• The ability to achieve x-training and demonstrate 'career' positions and appropriate remuneration for engineers – New management have identified this as key focus
Structure	• Current weakness that needs rectifying financial/organisational	• Speed and effectiveness of Implementation/willingness, abilities of 2nd line management
Culture	• Current lack of organic growth paradigm	• Significant challenge in competitive cost conscious, deflationary environment
Management Reporting Systems	• Currently weak, recognised as major issue by new management	• Effectiveness of implementation and middle-management adoption
IS	• Currently weak, recognised as major issue by new management	• Effectiveness of implementation and middle-management adoption
Focus on MVS	• Market pull but with reservations – clients and specialists	• Recognised as issue by new management – competition from system vendors – over capacity
Reliance on Ex-Ferranti Business	• Heavy reliance on 'old' Argus base revenues	• Rapid run-down of base – increased rate of attrition of base
• Contract size	• Current weakness in £30,000 lower limits	• Releasing limit may generate too much marginal business
• Market Image Corporate Image	• Currently weak but recognised as issue	• High costs related to gaining higher public perception
Software "Maintenance"	• Requires specialist skills – logical not physical oriented	• Should be limited to equipment related support
Reliance on Large Accounts	• Currently a risk factor - but two-sided coin	• Infrastructure change to deal with multiple small accounts
• Strategic Recruitment	• Currently a weakness	• Inability to attract 'top-guns' due to image/ remuneration career path issues

Source: INPUT

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An Overview of the European Customer Services Market

A
Vendors Become Services Integrators

Having successfully made the transition from cost centres to independent profit centres in the 1980s, customer services organisations have faced even steeper challenges in the early part of the 1990s, including:

- The decline of the equipment maintenance market
- The transition from datacentre to client/server computing
- The decline of product-led proprietary services and the growth of *open services*
- The severe economic recession.

In order to survive in the face of such challenges, customer services vendors have found it necessary to diversify their activities, developing wide portfolios of services products. Hence, vendors are currently active in the following ways:

- Finding methods of maximising equipment maintenance revenue streams for the longest possible period
- Moving into non-remedial, value-added services.

Today, many customer services vendors have effectively become *services integrators*, offering a full range of maintenance, support and value-added services for multivendor environments. The leading services integrators are the equipment vendors, along with a few of the larger independent services organisations. Most of the leading equipment vendors have now established themselves as players in the multivendor services market, and are offering some form of integrated services package (often referred to as *lifecycle* services).

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Only the larger independent service companies such as Sorbus, Granada and Getronics are fully equipped to compete on level terms in this new environment, where the ability to offer value-added solutions, often on an enterprise-wide basis, is fast becoming the key customer requirement.

The smaller independent maintenance organisations (IMOs) are finding it increasingly difficult to win business in an intensely competitive and fast-declining maintenance market. Most IMOs are now focused on survival by means of establishing niche services, or by pursuing partnership agreements with the equipment manufacturers and/or the outsourcing vendors.

B
New Support Markets Emerge as Maintenance Market Declines

In the last year, the customer services market has been characterised by a number of key trends:

- Sharp decline in the equipment maintenance market
- More and more vendors turning to multivendor services
- Network and desktop services growing strongly
- The market for software product support opening up.

1. Vendors Innovate As Equipment Maintenance Market Falls Sharply

Exhibit IIII-1 shows the extent of the decline of the equipment maintenance market in Europe, and the effect this is having on the overall customer services market. Healthy growth in the non-remedial sectors is effectively being masked by a steep decline in the maintenance sector.

The decline of the equipment maintenance market has been talked about for some considerable time, but the true extent of decline has only recently become apparent. In 1993, the market for equipment maintenance across all platforms fell by 8%, and is forecast to fall by 4% (CAGR) by 1999.

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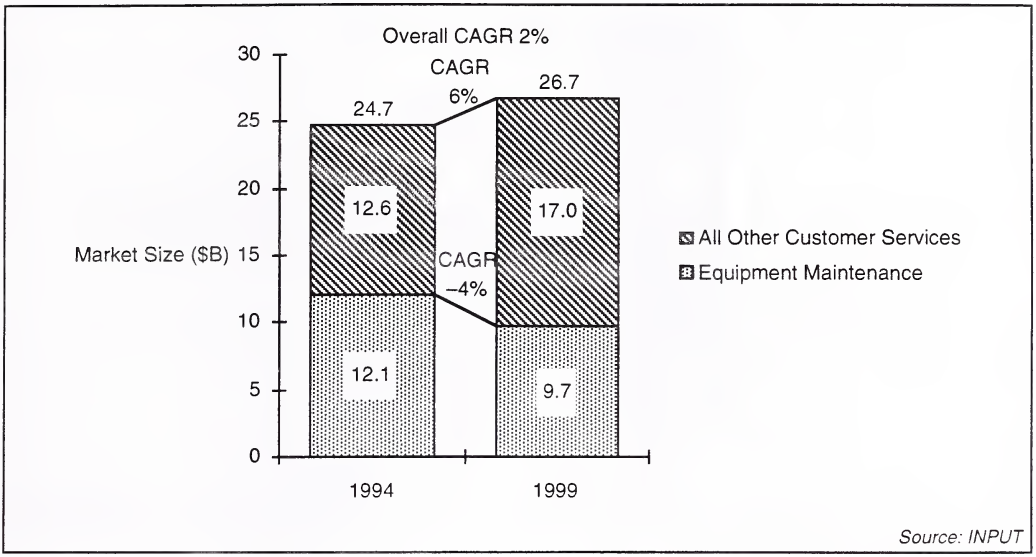
Exhibit III-1

European Customer Services Growth– Maintenance vs Non-Maintenance Services, 1994-1999 ($Billions)



Source: INPUT

Vendors looking to counteract the effects of declining maintenance revenues are increasingly turning to *multivendor maintenance* which, as shown in Exhibit III-2, is continuing to grow against the overall trend. Today, most of the leading equipment manufacturers have multivendor maintenance capability, a fact which is putting intense competitive pressure on the IMOs.

Another key driver in the equipment maintenance sector in the last year has been the escalating warranty battle between vendors; the trend towards longer and more extensive warranty terms continues. Last year also saw the emergence of *self-maintenance* as a legitimate service offering from a number of maintenance organisations.

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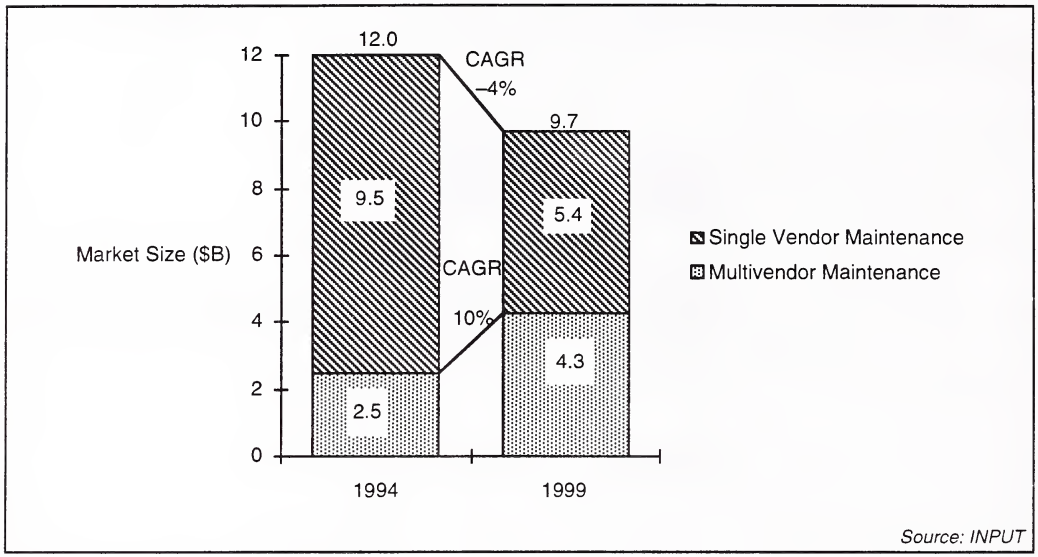
Exhibit III-2

Equipment Maintenance Market, Europe 1994-1999 ($Billions)



Source: INPUT

2. Multivendor Services Market Attracts Big Players

Maintenance is just one element of the fast-growing *multivendor services* market, which has attracted increasing numbers of equipment vendors in the last couple of years. HP, IBM, ICL and others have followed the lead of vendors such as Digital and Olivetti in reorganising for multivendor services.

As shown in Exhibit III-3, multivendor services currently account for 20% of the customer services market, but this is forecast to grow to 35% of the market by 1999.

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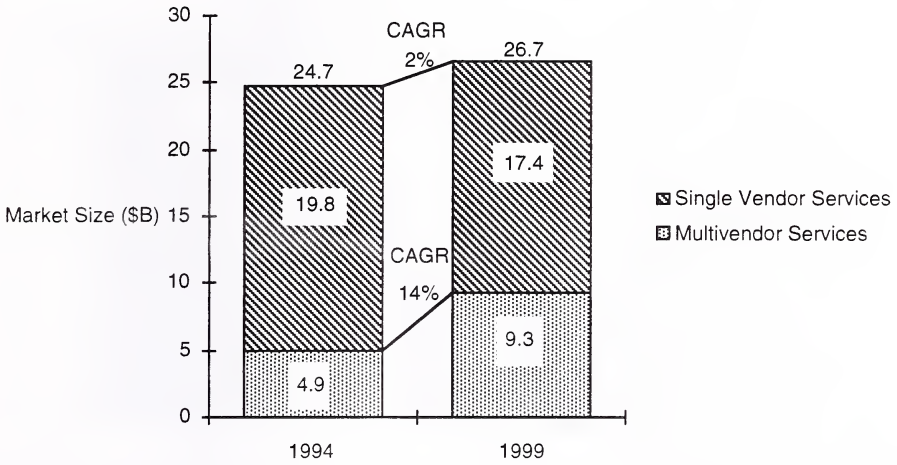
Exhibit III-3

Multivendor Services Market, Europe 1994-1999 ($Billions)



Source: INPUT

3. Network and Desktop Services Set for Growth

The market for services related to local area networks (LANs) and the desktop environment is poised for substantial growth, as increasing numbers of organisations begin to roll out mission-critical client/server systems.

The best opportunities are for non-remedial support services such as help desk services, software support, network management and remote monitoring. The market for non-remedial network and desktop support services is forecast to grow by 22% CAGR over the next 5 years (see Exhibit III-4).

The market for fully outsourced desktop services, worth $400 million in 1994, also promises substantial opportunities for those vendors capable of offering a fully managed services capability. This market is forecast to reach $1300m (27% CAGR) by 1999.

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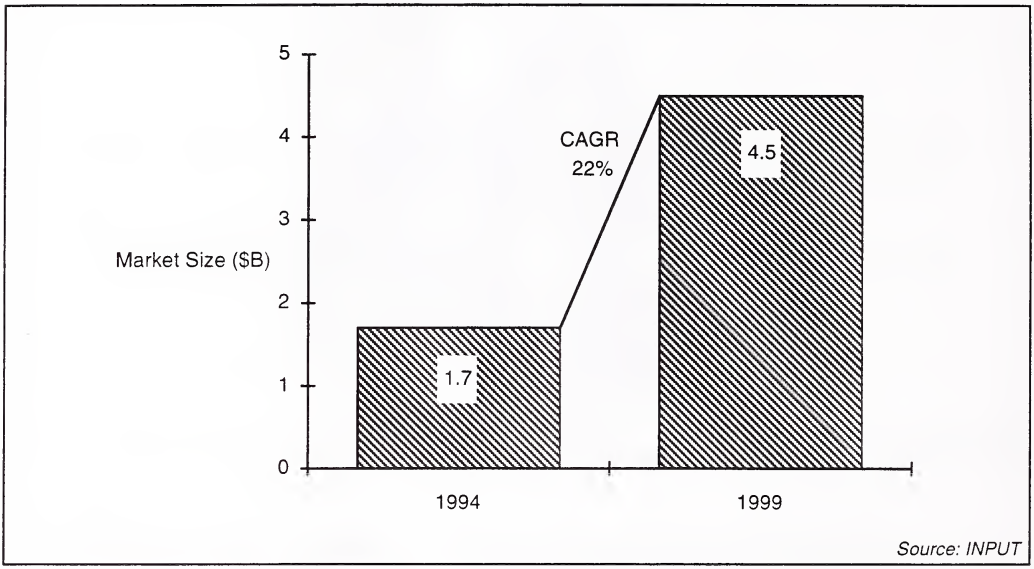
Exhibit III-4

Desktop Network Support Market, Europe 1994-1999 ($Billions)



Source: INPUT

4. Software Support Market Opens Up

In the last year, the market for software product support has opened up, with support vendors beginning to compete on services, price and performance. Support services for both datacentre and desktop software products are undergoing radical changes in the hands of leading vendors such as Microsoft, and for the first time customers now have real choice.

The drive towards open market conditions will generate significant market growth, as shown in Exhibit III-5. Application product support will grow fastest, (12% by 1999), with systems software support growing at 4% over the same period.

The keys to success for software product support vendors will be their ability to offer tailored service levels priced according to service value, whilst containing the cost of delivery. The next five years will see suppliers competing at every level to promote innovative software product support services.

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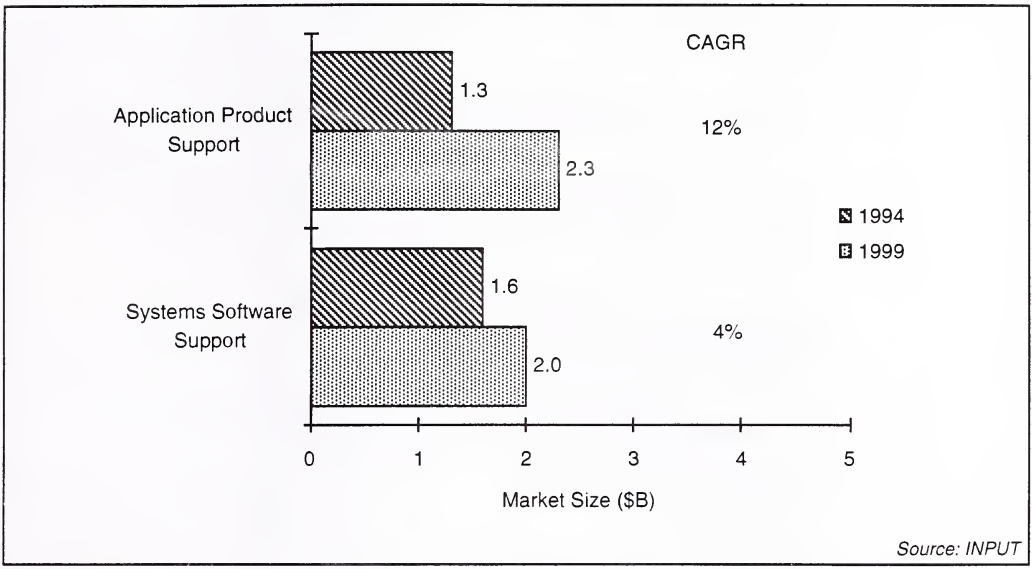
Exhibit III-5

Software Product Support Market, Europe 1994-1999 ($Billions)



Source: INPUT

C
Business Continuity, Professional Service Sectors Show Best Growth

Exhibit III-6 shows European customer services market growth by sector. As explained in section B, the most significant sector trend is the decline of the maintenance market. However, two non-remedial sectors in particular are forecast to show the best growth by far:

- The professional services sector is set to grow 12% CAGR over five years, reflecting the growing demand for support consultancy in increasingly complex computing environments. Professional services in this context are limited to the support of the systems platform or network and its operating environment
- The market for business continuity services is forecast to re-emerge strongly following slow growth during the recent recessionary years. This sector is forecast to grow by 16% CAGR over the next five years.

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Exhibit III-6

European Customer Services Market Growth by Sector, 1994-1999

Service Sector	($Billions, Rounded)		
	1994	1999	CAGR 1994-1999 (%)
Equipment Service	12.1	9.7	-4
Environmental Services	7.1	9.3	6
Systems Software Support	1.6	2.0	4
Education & Training	2.4	3.0	4
Professional Services	1.0	1.8	12
Business Continuity Services	0.4	0.9	16
Total (Rounded)	24.7	26.7	2

Source: INPUT

D
Open/UNIX Platform Set to Dominate Customer Services Market

Exhibit III-7 shows customer services market growth by computer platform for the period 1994 to 1999. Currently, the distribution of service delivery is fairly evenly spread across all four platforms. However, both the proprietary midrange and mainframe platforms will show a sharp decline over the next five years. By 1999, customer services on mainframe and proprietary midrange platforms will fall from 50% to about a third of the total market.

The biggest growth area is in the open/UNIX server market, which will rise from just over 20% to 35% of the market by 1999. The open server and PC/workstation platforms combined (i.e. effectively the client/server market) will be dominant, with collectively 65% of the customer services market by 1999.

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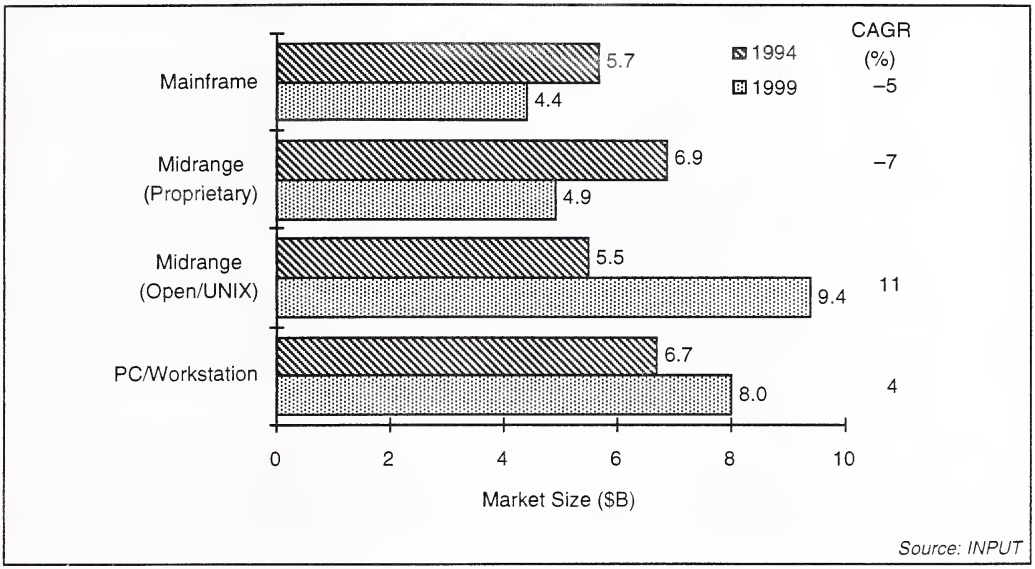
Exhibit III-7

**European Customer Services–
Market Growth by Platform, 1994-1999 ($ Billions)**



Source: INPUT

E
IMOs Lose Market Share, Independent Software & Services Firms Advance

In 1994 IT industry vendors (i.e. customer services and independent software and services vendors) account for 77% of user expenditure for customer services in Europe. The remainder of user expenditure is attributable to non-IT industry vendors.

Exhibit III-9 provides an analysis of the 1994 market by vendor type, with the three categories of customer services vendor (equipment vendors, independent maintenance organisations and dealers/distributors) shown separately. In comparing 1994 shares to those of the previous year, it is significant to note that:

- Equipment vendors' market share is only slightly down, at 57.2% from 57.5% in 1993
- The dealer/distributor channel has retained the same market share (3%)

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- The IMOs' share has fallen from 8.7% to 7.3%
- The independent software and services vendors have improved their market share from 8.9% in 1993 to 9.4% in 1994
- Non-IT vendors have increased their share slightly from 22% in 1993 to 23% in 1994.

The net effect is that customer services vendor groups (collectively) are losing market share to the independent software and services vendors as non-maintenance activities become more important. However, equipment suppliers in particular are finding success in alternative service sectors such as network services, environmental services, systems integration and systems operations.

The IMOs are suffering the most, given their heavy dependence on the maintenance market. However, the select group of large multi-national independent maintainers are now moving more aggressively into the general services business, and can be expected to hold their market shares over the next five years.

Though not reflected in the 1994 market shares, the large dealers and distributors are also expected to improve their market standing as they push more strongly into the general service business.

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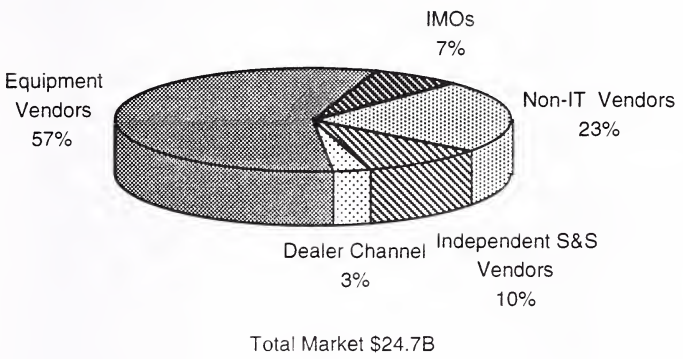
Exhibit III-8

European Customer Services by Vendor Type, 1994



Source: INPUT

F
Leading Customer Services Vendors At A Glance

Exhibit III-9 lists the top 10 vendors ranked by 1993 customer services revenue. (See Chapter 4 for a full top 20 list, with revenues broken down by service sector). The list is dominated by the equipment vendors, though there is one independent service company, Getronics, at number 10.

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Exhibit III-9

**European Customer Services–
Top 10 Vendors 1993**

Vendor	1993 Customer Services Revenues ($ Millions)	1993 Market Share (%)
IBM	3,160	12.8%
Digital	1,700	6.9%
Siemens-Nixdorf	1,490	6.1%
Bull	900	3.7%
Hewlett-Packard	845	3.4%
Olivetti	830	3.4%
ICL	820	3.3%
Unisys	755	3.1%
AT&T	685	2.8%
Getronics	300	1.2%

Source: INPUT

The leading 10 companies between them accounted for 47% of 1993 user expenditure for customer services in Europe.

Maintenance revenues have declined for most vendors, though most are still heavily dependent on this revenue stream. Siemens-Nixdorf derives the highest percentage of its customer services revenues from maintenance (86%) with IBM the second highest (78%). Digital, one of the early adopters of non-maintenance services a number of years ago, derives only 59% of its services revenues from equipment maintenance.

Generally, much progress has been made in developing non-remedial revenue streams, with most vendors extending their portfolios to encompass much broader support and value-added services in 1993/4.

Of the equipment vendors, Hewlett-Packard and AT&T (NCR) have improved their market share by the biggest margin (up 0.7% over 1992 in both cases). Siemens-Nixdorf (0.6%), Olivetti (0.3%), IBM (0.3%) and Unisys (0.2%) have also improved their market shares.

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The biggest improvement by an independent organisation was recorded by Getronics, who saw their market share rise from 0.1% in 1992 to 1.2% in 1993.

G
Country Market Growth 1994 to 1999

Exhibit III-10 provides a forecast for the growth of user expenditure for customer services in the four largest country markets in Western Europe. Despite a generally brighter economic outlook in 1994, most countries are forecast to experience low customer services growth for the period 1994 to 1999, the European average being just 2% CAGR. However, this reflects the significant dampening effect on the market of the decline in the equipment maintenance sector.

The combined share of these four largest country markets accounts for 68% of user expenditure for customer services in Europe. The percentage accounted for by each major country market is as follows:

- France 18%
- Germany 21%
- United Kingdom 19%
- Italy 10%

IBM is the leading equipment vendor, in terms of customer services revenues, in two of the four largest country markets in Western Europe. The exceptions to IBM's market leadership are provided by:

- The German market where Siemens-Nixdorf relegates IBM to second place
- The United Kingdom, where ICL and Digital were just ahead of IBM in 1993.

In France and Italy, the local national equipment manufacturers, Bull and Olivetti respectively, are in second place behind IBM.

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Exhibit III-10

Customer Services Country Market Growth, 1994-1999

Country Market	($ Billions) 1994	1999	CAGR 1994-1999 (%)
France	4.42	4.66	1
Germany	5.28	5.34	0
United Kingdom	4.59	4.88	1
Italy	2.46	2.64	1
Rest of Europe	7.95	9.16	3
Total (Rounded)	24.7	26.7	2

Source: INPUT

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IV

The Customer Services Market Defined

A
INPUT's View of The Customer Services Market

INPUT's view of the customer services market is illustrated in schematic form in Exhibit IV-1. This exhibit illustrates the overall structure of the hardware products or equipment market for systems, and the relationship between customer services and the other segments of the equipment market.

Included within INPUT's definition of customer services are six service sectors:

- Equipment maintenance
- Environmental services
- Systems software support
- Education and training
- Professional services
- Business continuity services.

Excluded from INPUT's definition of the customer services market, as essentially product markets, are:

- Sales of spare parts
- Media and supplies sales
- Hardware product sales themselves.

Exhibit IV-1 indicates the principal activities undertaken within each of the six service sectors. In each service sector, INPUT's definition of user

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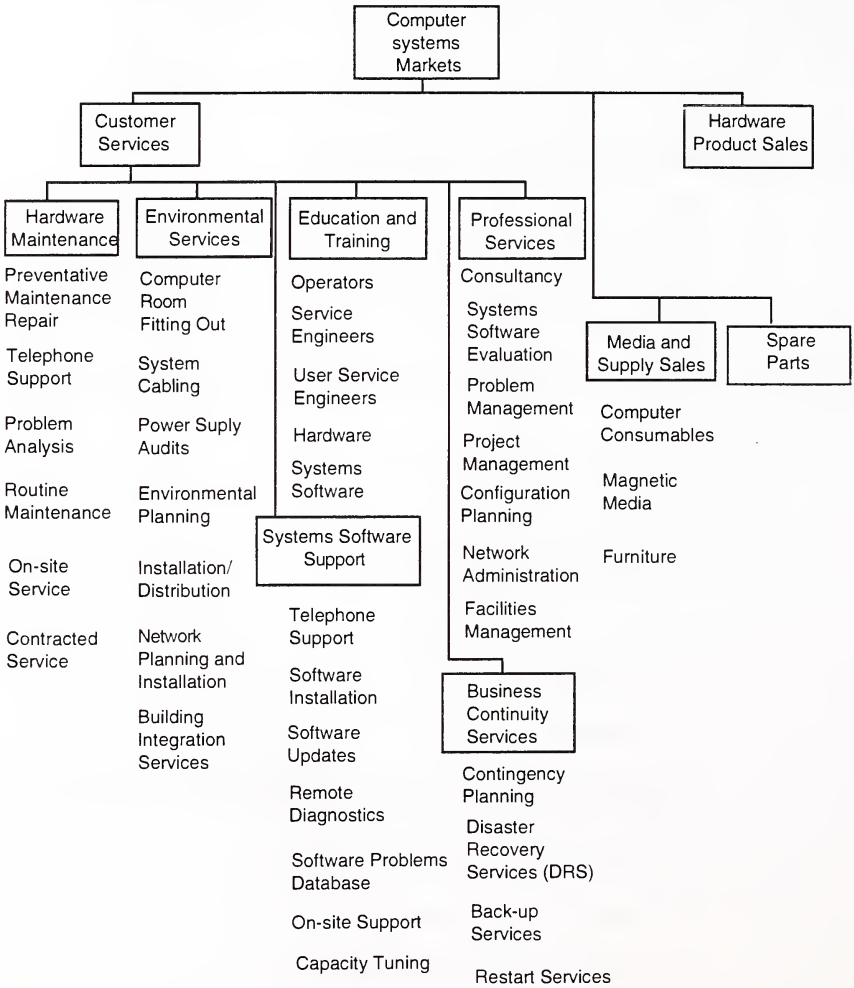
expenditure includes only those services provided to users by an external organisation on a chargeable basis. Services provided by subsidiaries or internal resources are considered unavailable for open tender. They are therefore excluded from the open market but included in the captive market potential.

Exhibit IV-1

Customer Services Market Structure



Source: INPUT

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Software support activities that are included in the customer services market are those activities related to the support of systems software. Exhibit IV-2 illustrates INPUT's definition of the software products market. Aspects of software support included in the customer services market are restricted to those areas highlighted in the exhibit by placing them inside a rectangular box. They relate to system control and data centre management software products.

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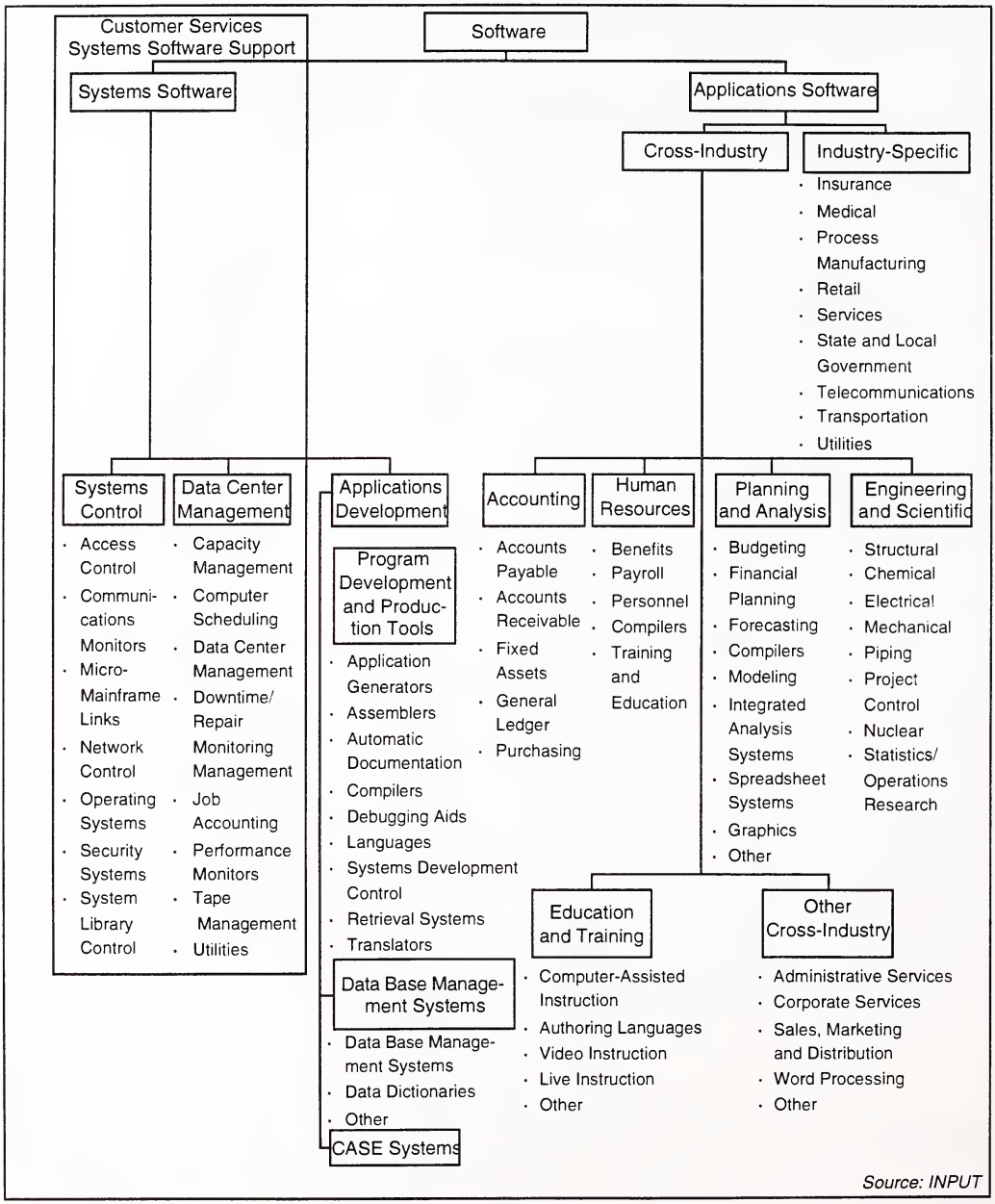
Exhibit IV-2

Software Products Market Structure



Source: INPUT

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B
Customer Services Sectors

Customer services sectors are defined by INPUT as follows:

- **Equipment maintenance**: the repair or routine preventive maintenance of computer systems hardware or hardware components. Included are associated support activities such as telephone support, problem analysis and remote diagnostics. Contracts may be for one or more years; alternatively repairs may be effected on an ad hoc basis.
- **Environmental services** are defined as all those planning and implementation services which affect the environments in which computer platforms are expected to run. For these purposes, "environment" can mean any of the following:
    - The computer room fixtures and fittings
    - Cabling between computers and other devices in a system or network
    - Physical environment, such as: electrical power, air conditioning, water cooling, smoke or fire detection equipment
    - Network attachments
    - Buildings in which computers or networking devices or terminals must reside.

Environmental services normally involve the installation, upgrade, repair or de-installation of some piece of equipment, but may be restricted to planning only.

- **Systems software service/support**: software maintenance activities that relate to systems software (not applications software). This includes associated support activities such as telephone support, problem analysis and software diagnostics.
- **Education and training**: all education and training expenditure for IT industry applications is included within the definition of customer services.
- **Professional services**: within the definition of customer services, this sector of the market refers only to those elements of professional services that are concerned with the support of the systems platform or network and its operating environment, including areas such as:

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- Consultancy
- Network Administration
- System Software Evaluation
- Problems Management
- Project Management
- Configuration or Capacity Planning.

To distinguish them from environmental services, these professional services are normally restricted to planning, design or management services, without any installation of platform or ancillary equipment. It is important to acknowledge that these services are only part of the more widely defined professional services marketplace.

- **Business continuity services** include a number of service elements related to keeping a business running in the event of a major incident which temporarily puts its IT platform or network completely out of action. They include:
  - Planning for such a contingency
  - Disaster Recovery Services
  - Back-up services for magnetic or optical media
  - Restart services, covering all activities which contribute to reinstating on a permanent basis the platform or network which suffered the major incident.

  These services can be sold together in any combination or as free-standing services.

C
Customer Services Vendors

INPUT's definitions of the three primary categories of customer services vendor are as follows:

- **Equipment vendors** are defined as companies that manufacture computer hardware/equipment and may service equipment manufactured by themselves or other equipment manufacturers

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- **Independent maintenance organisations (IMOs)** are defined as companies that service computer equipment and are independent of the manufacturer or agent who sold the equipment
- **Dealers and distributors** are defined as vendors who service equipment sold by them, either as an agent of the equipment manufacturer or as a value-added reseller (VAR).

D
Customer Services Revenue Streams

Exhibit IV-3 provides a diagrammatic representation of the total customer services market. This model indicates the captive and non-captive revenue components of the total customer services market and the various revenue streams that combine to form the total market.

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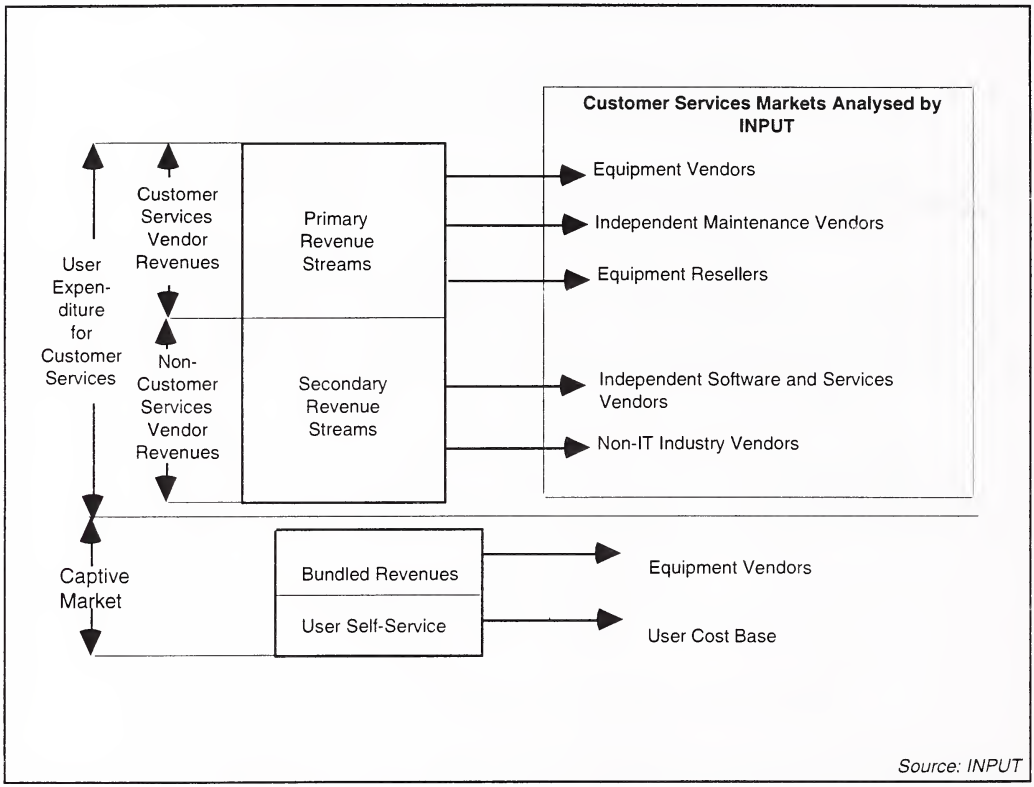
Exhibit IV-3

Customer Services Revenue Streams



Source: INPUT

User expenditure for customer services forms that portion of the market in which users are provided with vendor services for which they pay separately. This portion of the market sub-divides into two components:

- **Customer services vendor revenues**. This portion of the customer services market refers to vendors for whom customer services revenues are considered to be a primary revenue stream:
  - Equipment Vendors
  - Independent Maintenance Companies
  - The Dealer/Distributor portion of the indirect equipment resellers market.

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- **Non-customer services vendor revenues** refer to user expenditure for customer services with vendors for whom customer services revenues are not considered to be a primary stream. This portion of the market results from the following activities:

  - The system integration (SI) and turnkey systems segments of the indirect equipment resellers' market. In a minority of cases, these vendors provide service and support for the system platform

  - Software and services vendors whose primary source of revenue results from such items as custom software development will sometimes also provide systems support

  - Non-industry vendors such as building/construction companies or specialist product and building services companies that provide environmental services. Provision of these services is a secondary aspect to the vendor's main line of business; for example, a specialist air- conditioning company might service many industry sectors, with systems for a whole range of applications besides computer room air-conditioning.

The captive portion of the customer services market relates to the provision of services for which the user does not pay separately. For example:

- Systems software support charges may be bundled as part of the software license fee, rather than paid for separately by the user

- Users who wholly or partly provide their own customer services from the use of in-house resources. In this case, the charges for services are accrued as an in-house cost and therefore do not result in external expenditure.

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Customer Services Country Market Forecasts, 1994-1999

This chapter contains exhibits showing the market sizes and growth forecasts for customer services in the UK and the Netherlands. Two types of analysis are given in local currency for each country:

- **Market size and structure**, showing the top 10 vendors plus the revenues of the five vendor types which are active in the market:
  - Systems (equipment) vendors
  - Independent Maintenance Organisations (IMOs)
  - Dealers, distributors and Value-Added Resellers (VARs)
  - Independent software and services vendors
  - Non-IT industry vendors (mainly construction and building services vendors)
- **Five-year forecast by service sector**, with 1993 as the base year and 1994 to 1999 as the forecast period.

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Exhibit V-1

Customer Services Revenues, 1993–United Kingdom (£ Millions)

Vendor	Equipment Maintenance	Environmental Services	Systems Software Support	Education & Training	Other Professional Services	Business Continuity Services	Total Customer Services
ICL (Fujitsu)	200	26	43	2	11	6	290
Digital	200	25	36	15	6	4	290
IBM	220	21	0	21	5	11	280
HP	100	11	10	8	11	3	140
Unisys	80	13	6	7	5	5	120
Granada	70	2	0	0	2	5	80
AT&T	60	4	3	4	14	0	80
Bull	50	3	7	7	2	0	70
Olivetti	50	2	0	1	1	0	50
Wang	30	7	3	2	2	0	45
Other Systems Vendors	225	50	18	11	20	11	340
IMOs (1)	200	12	20	6	8	6	250
VARs (2)	40	6	13	12	7	0	80
ISVs (3)	15	0	94	97	22	32	260
Non-Industry Vendors (4)	0	668	0	0	5	0	670
TOTAL MARKET	1,540	850	250	195	120	85	3,050

Source: INPUT

Notes: (1) IMOs = Independent Maintenance Organisations
(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers
(3) ISVs = Independent Software/Services Vendors
(4) Non-IT Industry Vendors are from the Construction and Building Services sectors
(5) Totals may not add up due to rounding.

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Exhibit V-2

Customer Services Market Forecast, 1994-1999
United Kingdom

	Market Size (£ Millions)								
Service Sector	**1993**	**93-94 Growth (%)**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**94-99 CAGR (%)**
Equipment Maintenance	1,540	-5	1,460	1,400	1,330	1,200	1,120	1,030	-7
Environmental Services	850	7	910	960	1,010	1,070	1,120	1,180	5
Systems Software Support	250	12	280	300	320	350	370	395	7
Education & Training	195	3	200	205	205	210	215	220	2
Business Continuity Services	85	24	105	130	155	180	215	240	18
Other Professional Services	120	17	140	160	180	200	220	250	12
Total Customer Services	3,050	2	3,100	3,150	3,200	3,200	3,250	3,300	1

Source: INPUT

Note: Totals may not add up due to rounding.

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Exhibit V-3

Customer Services Market Forecast, 1994-1999
United Kingdom

	US$ Million (rounded)								
Delivery Modes	**1993**	**93-94 (%)**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**94-99 CAGR (%)**
Equipment Maintenance	2,280	-5	2,160	2,070	1,970	1,780	1,660	1,520	-7
Environmental Services	1,260	7	1,350	1,420	1,490	1,580	1,660	1,750	5
Systems Software Support	370	12	414	444	473	518	547	584	7
Education & Training	288	3	296	303	303	311	318	325	2
Business Continuity Services	126	24	155	192	229	266	318	355	18
Other Professional Services	178	17	207	237	266	296	325	370	12
Total Customer Services	4,510	2	4,590	4,660	4,730	4,730	4,810	4,880	1

Source: INPUT

Note: Totals may not add up due to rounding.

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Exhibit V-4

Customer Services Revenues, 1993–Netherlands (Dfl Millions)

Vendor	Equipment Maintenance	Environmental Services	Systems Software Support	Education & Training	Other Professional Services	Business Continuity Services	Total Customer Services
Getronics	230	81	45	21	114	18	510
IBM	290	49	0	16	5	4	365
Digital	110	14	27	13	5	1	170
Unisys	80	10	5	5	4	4	100
HP	60	7	6	5	7	2	90
AT&T	50	3	3	1	10	0	70
Siemens-Nixdorf	60	0	0	4	0	0	65
Olivetti	40	7	2	2	3	0	55
Bull	40	5	3	1	2	0	50
ICL (Fujitsu)	40	0	3	1	5	0	50
Other Systems Vendors	385	30	30	20	12	5	480
IMOs (1)	110	5	5	4	2	3	130
VARs (2)	40	6	17	7	1	0	70
ISVs (3)	18	5	44	243	3	8	320
Non-Industry Vendors (4)	0	650	0	0	0	0	650
TOTAL MARKET	1,550	875	190	340	175	45	3,200

Source: INPUT

Notes: (1) IMOs = Independent Maintenance Organisations
(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers
(3) ISVs = Independent Software/Services Vendors
(4) Non-IT Industry Vendors are from the Construction and Building Services sectors
(5) Totals may not add up due to rounding.

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Exhibit V-5

Customer Services Market Forecast, 1994-1999 Netherlands

	Market Size (DFI Millions)								
Service Sector	**1993**	**93-94 Growth (%)**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**94-99 CAGR (%)**
Equipment Maintenance	1,550	-4	1,490	1,440	1,370	1,310	1,240	1,170	-5
Environmental Services	875	9	950	1,030	1,105	1,185	1,260	1,340	7
Systems Software Support	190	0	190	185	180	175	170	165	-3
Education & Training	340	6	360	385	410	435	475	540	8
Business Continuity Services	45	22	55	65	75	85	100	120	17
Other Professional Services	175	14	200	230	260	290	330	380	14
Total Customer Services	3,200	2	3,250	3,350	3,400	3,500	3,600	3,700	3

Source: INPUT

Note: Totals may not add up due to rounding

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Exhibit V-6

Customer Services Market Forecast, 1994-1999
Netherlands

	US$ Million (rounded)								
Delivery Modes	**1993**	**93-94 (%)**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**94-99 CAGR (%)**
Equipment Maintenance	799	-4	768	743	706	676	639	603	-5
Environmental Services	451	9	490	531	570	611	650	691	7
Systems Software Support	98	0	98	95	93	90	88	85	-3
Education & Training	175	6	186	198	211	224	245	278	8
Business Continuity Services	23	22	28	34	39	44	52	62	17
Other Professional Services	90	14	103	119	134	150	170	196	14
Total Customer Services	1,650	2	1,676	1,727	1,753	1,804	1,856	1,907	3

Source: INPUT

Note: Totals may not add up due to rounding.

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Competitor Profiles

This chapter contains profiles of independent maintenance organisations to provide supporting background material within which to evaluate ServiceTec.

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GRANADA COMPUTER SERVICES INTERNATIONAL

Background

The Granada Group PLC entered the independent computer maintenance market with the purchase of Computer Field Maintenance (CFM) for £26 Million in April 1986, at the time the largest Third Party Maintainer (TPM) in the U.K. In August of the same year, Granada purchased the SMS International Group (SMS).

Initially these companies retained their names within Granada's Business Services Division, one of the Group's four main operating divisions. In October 1988, Granada Computer Services International (GCSI) was launched. The development of GCSI is shown in Table 1.

Table 1. Granada Computer Services International - Development

April	1986	CFM purchased for £26 Million.
Aug	1986	SMS International acquired.
Sept	1986	SMS Spain launched.
Dec	1986	CFM and SMS UK integrated.
	1987	Small acquisitions made in UK and France; expansion into Italy and Belgium.
Jan	1988	Mainstay acquired.
June	1988	DPCE (its major UK competitor) purchased at a price of £110 Million. (DPCE had offices in Europe and USA).
Oct	**1988**	**Formation of Granada Computer Services International.**
	1988	Acquired Wigo (Germany)
	1990	Essex and React acquired (both USA).
	1992	Moor Data and Remakor Services acquired (both Switzerland).

Since the formation of Granada Computer Services International (GCSI) in October 1988, the company has had several re-organisations and considerable re-structuring, including replacement of the Managing Director (twice), and many redundancies in senior and middle management.

Some of the redundancies were due to the duplication of resources caused by the many acquisitions, others were a result of the trimming of several layers of management; however the last two rounds included customer engineers and software support specialists.

The Granada Group's foray into the computer marketplace cost it almost £300 Million, with the aim of developing an expanding fourth arm to its existing Rental, Television and Leisure Divisions. It is acknowledged that this strategy has not been a success and was a major factor in the resignation of the previous Group Chief Executive, Derek Lewis.

Under its new Chief Executive, Gerry Robinson, the Granada Group has diversified into new areas such as commercial catering and laundry. GCSI Services now holds a relatively small share (7.3% of turnover and 3.6% of profits in the first half of 1994 - see later) of the total Group operation.

The overall management of GCSI is shared between Richard Ferre (who is responsible for Belgium, France, Netherlands, Sweden, Switzerland, UK & Ireland) and Pete Wills (who is responsible for Germany, Italy, Spain and USA). Both are based in the UK head office at Bracknell.

During 1993 the decision was made to separate the fixed site (resident engineers) and call out business (mobile engineers) parts of GCSI. This latter operation was combined with parts of the UK Rental division of the Granada Group. Richard Middleton is the Managing Director of this operation, Granada Service & Business Communications, based in Bedford. Granada states that the sharing of overheads between these two business has improved net margins in this area.

The UK is by far the largest part of the GCSI operation, and many of the new service developments, training, support and logistics, are led from here.

In addition to the TPM service operation, Granada has two subsidiaries, DPCE Products selling new and second-user computer equipment, and CDR providing computer disaster recovery in mainland Europe.

Few of the senior staff from the acquired companies remain at Granada; many of them moving on to other TPM companies, especially ND ServiceTeam and Systems Reliability. One move in the opposite direction has been Richard Ferre, formerly Managing Director of ND ServiceTeam.

The number of staff in each part of its operation is shown in Table 2.

Table 2. Granada Computer Services International - Staff Levels

Granada Computer Services International - Staff Levels			
Country/Operation	Engineers	Other	Total
Belgium	43	22	65
France	64	33	97
Germany	94	43	137
Italy	66	24	90
Netherlands	56	27	83
Spain	83	32	115
Sweden	19	7	26
Switzerland	42	16	58
UK & Ireland	700	256	956
USA	144	51	195
CDR	18	45	63
DPCE		18	18
Other		172	172
TOTAL	1329	746	2075

Main Offices

Granada Computer Services has its headquarters in the UK and offices in several countries. The number of offices in each country are shown in Table 3 and the locations of the main offices follow.

Table 3. GCSI Offices

Country	Offices
Belgium	3
France	9
Germany	8
Ireland	1
Italy	4
Netherlands	1
Spain	5
Sweden	3
Switzerland	4
UK	12
USA	4

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Computer Disaster Recovery Ltd.
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Granada Computer Services Inc.
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Services and Strategy

The main activity of Granada is the provision of third party computer hardware maintenance (TPM), which accounts for > 90% of all revenues; disaster recovery and product sales account for the remainder.

When the main companies (CFM, SMS, DPCE and Mainstay) were acquired and consolidated under the banner ' Granada Computer Services International', they had major differences of emphasis and marketplace; hence there were considerable integration problems.

Under the Chairmanship of John Curran, the company re-organised to focus on providing services to **major** customers. Existing small customers were allowed to move elsewhere and sales efforts are concentrated on larger contracts, typically valued at > £50,000 p.a. (and preferably > £100,000 p.a.).

Under the present management this focus continues, although the previous emphasis on mainframe sites has been tempered by the awareness of the industry trend towards downsizing.

Hardware Maintenance

As the core of the service operation, this is provided over a wide range of products from PCs to mainframes, from a large number of Manufacturers. Granada is particularly strong in the Digital, IBM and ICL marketplaces, although it has a sizeable presence in many others, including Unisys and Wang.

The UK operation (see later) provides almost half of the company's revenues and initiates many of the new ventures. The International React Centre and Technical Support Group is based in Winnersh, only a few miles from the head office in Bracknell.

In the UK, the fixed site operations have been split from the on call or mobile service offerings. The large sites have resident engineers and are run as separate profit centres.

On many of these sites, Granada engineers are responsible for maintenance across the entire spectrum of the customer's equipment; Granada states it supports 13,000 types of equipment from over 1,000 different manufacturers.

Although no longer marketing itself under the ' Total Support ' banner, this commitment to service equipment from a very wide range of sources is a major part of its maintenance strategy.

Fixed site operations are believed to account for 60% of UK revenues. Customers include British Airways (a contract held by DPCE since its inception in 1976), the Rover Group and several Ministry of Defence sites.

Recently, Computer Sciences Corporation (an FM provider) awarded a multi-million contract (£30 Million spread over 5 years) to Granada to maintain all the computer equipment at several British Aerospace sites. FM companies provide 20% of Granada's revenues and its fastest growing customer sector.

The PC maintenance division, formed after the acquisition of Commercial Data Systems (CDS) in 1987, and other UK on call operations, have been merged with other service operations within the Granada Group and responsibility passed to Granada Service & Business Communications, part of the Granada UK Rental division based in Bedford.

Centralised call control operates from the Bracknell office, with the International React Centre at Winnersh providing pre and post-sales support, remote monitoring and diagnostics (Digital, IBM and ICL), and assistance with new customer start-ups.

Spares are controlled centrally, although some may be held at the larger sites, and shipped to customer site when required. A few high value items are held in Winnersh for use in all countries, although most spares are sourced locally or from the USA. The spares in the UK are valued at approximately £20 Million; current depreciation at 2% per month is stated to exceed the value of new purchases.

The service offerings in the other countries combine both activities.

Software and Network Support

At the beginning of November 1992, Granada announced the launch of a Software Services operation and a range of service offerings in this area. These did not meet with success in the marketplace and some were scrapped early in 1993, and several more redundancies were announced.

In 1992, the Granada Group sold off its own internal software development and operations team (MIS department) to Hoskyns; Hoskyns has a five year contract to run Granada's mainframe and large retail network operation.

Although Granada does offer some forms of software support, it is a small part of its operation. Several of the International Technical Support specialists based in Winnersh can provide software expertise on their hardware, including MVS, VME, VMS. Assistance offered includes:

- Systems Integration
- Installation Management
- Consultancy and Systems Engineering; providing guidance and support on IBM and DEC systems software, planning, implementation and management.

The Bedford operation provides ' NetCare ' services comprising:

- Network Design
- Project Management
- Installation
- Network Management
- Software Support
- Network Maintenance

Products covered include Novell Netware and SCO UNIX. These services may be expanded to cover common PC applications in the future.

Disaster Recovery

When Granada purchased DPCE, it gained an 80% stake in Computer Disaster Recovery (CDR), a West Midlands-based provider of the eponymous service. Granada has recently purchased the remaining 20%.

This operation provides standby systems on a fleet of mobile trailers, which are transported to the customer's site in the event of a major computer disaster, e.g. fire or flood. The majority of customers is in the UK, although service can be provided on mainland Europe.

Last year CDR opened a permanent 8000 square foot, 'hot-standby' site near Kings Cross station, in London. This is said to be equipped with IBM, DEC and Hewlett-Packard mid-range systems and has space for up to 200 customer staff.

Product Sales

Again with the purchase of DPCE, a product sales operation was acquired. This subsidiary sells new and second-user equipment to both maintenance customers and other companies.

Fourth Party Repair

Granada has extensive workshop premises at Telford in Shropshire and repairs the majority of equipment centrally, although some large sites still retain some skills.

In addition, these services are offered on a commercial basis independently of its TPM service. It is believed that this external repair activity is still small, earning revenues of < £1 million p.a.

Other Activities

In addition, to the other services identified above, Granada offers the following related activities:

- Environmental Monitoring
- Asset Management
- Project Management

Financial Performance

Granada's financial year runs from October 1st to the end of September.

The Granada Group reported its 1992/3 operating profit before interest and tax as £204.5 Million (1991/2 £147.1 Million) on total revenues of £1.615 Billion (1991/2 £1.340 Billion).

In the first half of the current year turnover increased (helped by acquisitions) to £941.4 Million and generated profits of £121.3 Million, both increases of 47% on the first half of the previous year.

The Computer Services operation provides a small, and decreasing, part of this revenue total, although its profitability is increasing. Turnover in the first six months was £69.1 Million compared to £76.3 Million in the first half of 1992/3. Half yearly profit is stated to be £4.4 Million, against the first half of £4 Million and a total of £8.4 Million in 1992/3.

Table 4 shows the Computer Services figures for the last three years.

Table 4. Granada Computer Services - Financial Performance

Granada Computer Services International - Revenues (£M)			
Country/Operation	1990/1	1991/2	1992/3
Belgium	4.6	4.7	5.3
France	13.2	9.0	7.1
Germany	8.0	9.3	9.6
Italy	5.9	7.4	8.1
Netherlands	6.5	6.1	7.1
Spain	7.0	8.2	8.2
Sweden	2.3	2.9	2.9
Switzerland	2.3	2.4	5.0
UK & Ireland	79.8	76.5	64.7
USA	13.2	13.3	12.8
CDR	8.1	9.5	10.2
DPCE	4.7	3.4	4.1
Other	2.6	6.8	0.8
TOTAL	158.2	159.5	145.9

SWOT Analysis

Strengths:

- A sizeable presence in the independent marketplace in many countries; usually one of the leading players in each country. Granada claims to be the largest independent maintainer in Europe.

- Has trimmed its cost and overhead base in recent years.

- Expertise in mainframes and minicomputers is unrivalled by many other TPMs which are PC specialists.

- Good reputation in the government sector, especially the Ministry of Defence.

- Long-term contracts with some major customers, e.g. British Airways and British Aerospace.

- Part of the large and financially secure Granada Group PLC.

- Has achieved ISO 9001 accreditation in the UK and is aiming for it in other European countries.

Weaknesses

- Poor staff morale. Are there more redundancies?

- The publicity over its many problems has undermined customer confidence (especially in the UK). It is still losing some major customers.

- Has antagonised some of the computer manufacturers in the past with its aggressive attitude.

- Its NetCare operation has only just been launched and its software skills are sparse; meanwhile the Granada Group has hived off its own MIS operation to Hoskyns.

- The USA subsidiary is still causing the company some problems.

- The new Group Chief Executive, Gerry Robinson, has ambitions in other areas. e.g. Catering, and recently the acquisition of LWT. Will this lead to the sale of Granada Computer Services International? This Division contributes less than 8% of Group revenues and a smaller proportion (< 4%) of profits.

Opportunities

- Now it has cut its cost base, it may be able to cut prices or increase margins even more, particularly on the older systems where it has spares and expertise.

- Has forged successful partnerships with various Facilities Management providers, e.g. Hoskyns and CSC, an increasingly important part of the marketplace. Could these be enhanced or expanded?

- Additional pressure from Government for its departments to choose single source maintenance and Granada is a favoured supplier.

- To extend the range of services offered as it has its infrastructure in place.

- To expand its market share in many of the countries served.

- Growing prospects for disaster recovery services.

Threats

- It is still predominantly a UK operation, with little expertise and staff in many other countries. GCSI has very few multi-national customers and little credibility to offer an ' international solution '.

- Although GCSI is still gaining **new** contracts it is still losing old ones through customer dissatisfaction.

- Before the acquisition of DPCE, many large organisations e.g. BT and MOD, used to consider the alternatives as CFM and DPCE; since the formation of GCSI, these customers consider ' Granada and another '.

- The TPM market is still very price competitive. The computer manufacturers, especially Digital, IBM and ICL (in partnership with Sorbus) are targeting this marketplace aggressively and maintenance prices continue to decline.

- Warranties terms are increasing - 3 years is becoming commonplace for PCs and even 5 years or its life-time for some items.

- The company has spent little on service development and marketing in recent years. Cost cutting has returned it to profitability but has it kept pace with customer needs and other developments in the industry?

- As hardware prices on PCs and related products decline, yet costs of maintenance increase, e.g. travel and energy, customers may be tempted to forego maintenance contracts and scrap unserviceable products.

GETRONICS SERVICE

Background

Getronics Service started under the name of Geveke Electronica Service in 1968 providing after-sales service on the computer and peripheral products sold by Geveke Electronica. It entered the Third Party Maintenance business in 1978 and quickly became the market leader in Benelux.

In 1983 it separated from its former parent and the Group (Getronics NV) was formed, of which it is a wholly owned subsidiary. It has been listed on the Amsterdam Stock Exchange since 1985. Getronics is believed to be the largest Dutch company in the IT Marketplace with a turnover in 1993 of 1,302 Million Dfl (approximately $745 Million).

It is divided into four sectors, two of which (Maintenance & Installation and Software-services & Consultancy) focus on services and two on systems integration (Office Integration Systems and Communications Systems & Industrial Electronics).

Getronics operates principally in Benelux, but has operations in many European countries and the USA. Growth has been organically and through acquisitions and it has recently entered partnerships with Sorbus and ITS which have broadened its geographical presence and expanded its range of services.

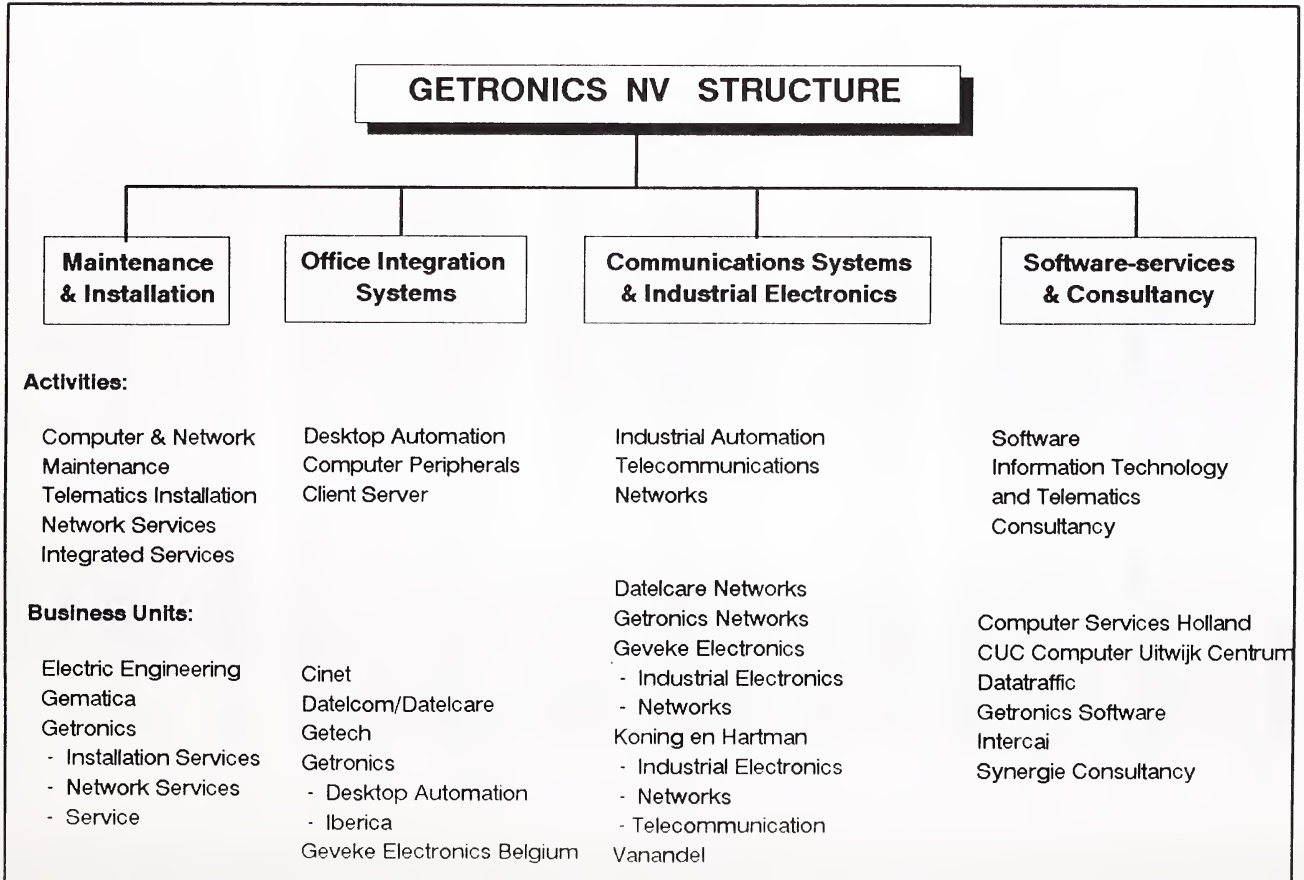
The Group comprises a number of specialised business units providing a wide range of products and services in the marketplace. The Group strategy is based upon a flat structure, limited overheads, decentralised management and profit and loss accountability.

Many of these business units operate under different names; independent maintenance services are provided by Getronics Service (Benelux), Gematica (Spain), Getech (UK) and Cinet Service (Scandinavia). Figure 1 shows the Group structure, the services provided and the key business units involved.

Getronics as a Group states that approximately 80% of its employees are active in providing services. Getronics Service mission statement is:

> *' The provision to our customers of a large number of specific services aimed at installation, maintenance, management and additional services. These services can be provided in combination depending upon the specific needs of the customer. These services are grouped together under the title Integrated Services. In providing these Integrated Services Getronics Service aims to minimise the cost of ownership for its customers and guarantees the maximum availability of their desktop and network systems. The services offered cover the entire cycle from the installation of networks and systems through the period of use when maintenance and management are the central features up to and including their removal and possible re-use. '*

Figure 1. The Getronics Group Structure



The range of activities carried out by these business units is illustrated in Figure 2 (below) showing both the focus on the end-user and the linking of complementary business units.

Customers include many major companies, financial institutions, government organisations and the ' not-for-profit ' sector.

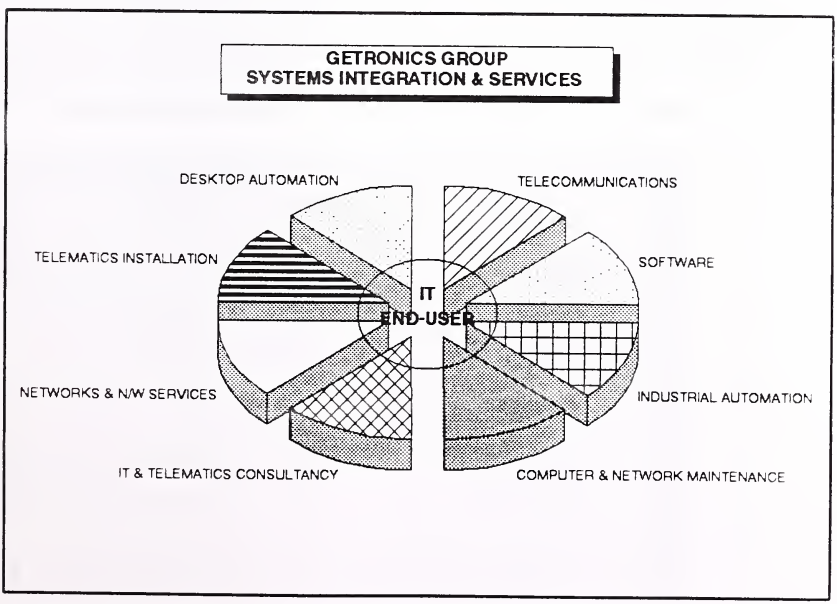
Getronics started its TPM service in Benelux by offering independent maintenance on peripherals, desktop computer equipment and data communications equipment. With the emergence of the PC marketplace in the 1980s, Getronics expanded its product and geographical coverage and is now one of the largest TPM companies in Europe.

Hardware maintenance is now offered, not only on desktop products, but also on a wide range of larger systems from manufacturers such as Digital, Hewlett-Packard, IBM and Sun Microsystems.

In 1993 Getronics signed a Co-operation Agreement with Sorbus Europe to offer service on a wider range of products including mainframes, and hence to provide it with the capability of offering total coverage for many of its major users.

In June it signed a similar Co-operation Agreement with ITS in order to expand its coverage of network services. ITS is a wholly owned subsidiary of SITA a leading provider of network services operating in 38 countries in the world.

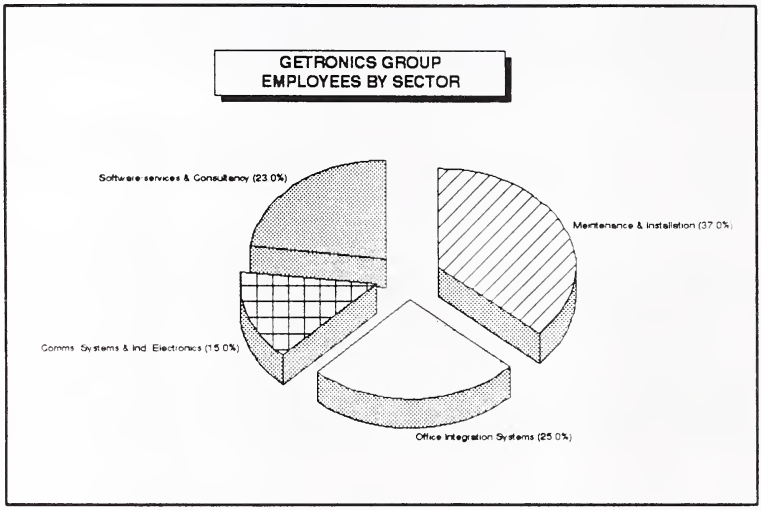
Figure 2. Getronics Group - Systems Integration & Services



Main Offices

The Getronics Group has its headquarters in Amsterdam and a large number of offices throughout Europe and one in the USA (Intercai in Chicago). Many of these serve individual business units, although some house staff from several. The percentage of total staff in each sector is shown in Figure 3.

Figure 3. Getronics Group - Employees by Sector


GETRONICS GROUP
EMPLOYEES BY SECTOR
Software services & Consultancy (23.0%)
Maintenance & Installation (37.0%)
Comms Systems & Ind Electronics (15.0%)
Office Integration Systems (25.0%)

Details of Getronics Service staff and offices are shown in Table 1 and the locations of the main branch offices of this and associated business units follow.

Table 1. Getronics Service Offices and Staff Numbers

Country	Offices	Staff
Benelux		
The Netherlands	8	910
Belgium	4	98
Scandinavia (Cinet Service)		
Norway	17	132
Denmark	4	15
Spain (Gematica)	6	52

In addition to those shown in Table 1, the following sister companies offer services either individually or in partnership:

- Electric Engineering (Benelux, 708 staff, telematics installation services).

- Computer Uitwijk Centrum (Netherlands, 70 staff, a Computer Disaster Recovery Centre).

- Getronics Networks Services (Netherlands, 38 staff, network management services and supplier of communication services such as E-mail, X400 message services, EDI and video-text).

- Getexo (Netherlands, 35 staff, logistical and technical services. This is a joint venture with Van Ommeren - Intexo).

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Electric Engineering BV
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Fax: (31) (0) 3402 472 50

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Getronics Service
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Other

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Services and Strategy

The mission statement on the first page summarises the philosophy of Getronics and the integration of a suite of services which may be offered to a wide range of medium and large end-user customers.

Getronics achieved ISO 9001 quality accreditation in October 1992 for repair and maintenance services and the design and development of methods and systems for repair services. This is more comprehensive coverage than most, if not all, of its competitors.

Primarily Getronics operates in the desktop automation, networking, client-server and communications sectors. Networking services cover local and wide area networking (LAN and WAN) including PABX.

In addition, Getronics operates a European Repair Centre, based in the Netherlands and Germany, which provides repairs for OEM's, distributors and end-users.

Hardware Maintenance

Hardware maintenance is offered over a wide range of products including almost all makes of PCs, peripherals and communications equipment. In addition service is provided on the following ranges of minicomputer and Unix system:

- Acer-Altos Unix systems
- Digital Microvax and Alpha products
- HP 9000 series
- IBM System 3x, AS/400, RS/6000 ranges of system
- NCR Tower range
- Sun Microsystems products

Following the signing of a Co-operation Agreement with Sorbus Europe, Getronics is able to offer management and maintenance of a wider range of systems, including mainframes.

Standard service offerings include the traditional on-site ' All in Service ', and other options such as ' Carry in Service ', ' Stand By Service ' and a ' Time and Materials Service '.

Contracts and response times are tailored to individual customer requirements and may include 24 hours by 7 day coverage, if required.

Software and Network Support

Getronics offers software support for the common operating systems and application software including networking software such as AppleTalk, Banyan Vines, IBM LanServer, MS Lan Manager, MS Advanced NT Server and Novell Netware.

In addition, File Server Recovery Support, Helpdesk Services and an Anti-virus service are available. Networking hardware from 3Com, Chipcom, Cisco, Codex/Motorola, Newbridge, Synoptics, UB Networks and Wellfleet, and PABXs from Northern Telecom are supported.

Integrated Services

It is the grouping together of several services which is a key feature of Getronics service offerings. This strategy provides:

- Opportunities for reduced cost of ownership for the end-user.
- Maximum availability of the computing environment without the ' finger-pointing ' or lack of problem ownership that may be encountered with other suppliers.
- Total support during the whole lifecycle of IT products.
- Competitive advantage over other TPM companies that can only offer a limited range of services.

Examples of the services offered are:

- Procurement and logistics support
- Total network installation and management
- Network audits and tuning
- Network commissioning
- Change management
- Service level management
- Cost management
- Total site management
- Inventory management

- Removal and installation services
- Helpdesk services
- PC application services
- LAN/WAN software services
- Facility management

Disaster Recovery

This is provided by Computer Uitwijk Centrum BV and is aimed principally at the mid-range system user with Digital VAX, HP 9000 and IBM AS/400 platforms, but, in addition, includes IBM mainframes.

Fourth Party Repair

In addition to its European Repair Centres in Amsterdam and Erlensee (Germany), Getronics offers a ' Warranty Support Programme ' for Manufacturers and distributors and ' Warehousing and Logistics ' services.

This latter service is provided by Getexo (a partnership with Van Ommeren Intexo) and is offered on a pan-European basis.

Other Activities

The Getronics Group provides a wide range of associated professional services, which include:

- Consultancy services
- Outsourcing and facilities management
- Refurbishment services
- Training

Financial Performance

Getronics financial year runs as per the calendar year and its half-yearly figures for 1994 have recently been announced (August 1994).

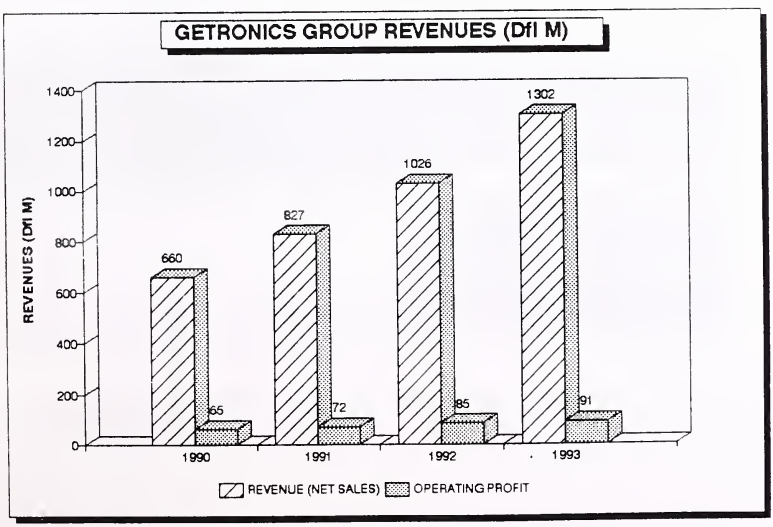
Despite poor market conditions throughout Europe in the 1990's the Group has maintained good growth both organically and by acquisition. Group financial data for the last few years are shown in Table 2 and Figure 4 below.

In the first half of the current year turnover increased to 660.2 Million Dutch Guilders (Dfl) and generated operating profits (before tax) of 48.0 Million Guilders, both increases of 21% on the first half of 1993.

Table 2. Getronics Group - Financial Details

GETRONICS GROUP FINANCIAL DETAILS (Dfl M)				
	1990	1991	1992	1993
REVENUE	660	827	1026	1302
GROSS PROFIT	309	398	481	566
OPERATING PROFIT	65	72	85	91
NET EARNINGS	47	53	61	66

Figure 4. Getronics Group Financial Details



Individual business unit details are not available, however the gross profit per Sector is shown in Figure 5.

Revenue and Gross Profit comparisons between Systems and Services (as shown in Getronics Annual Report) is provided in Table 3.

Figure 5. Getronics Group - Gross Profit Per Sector

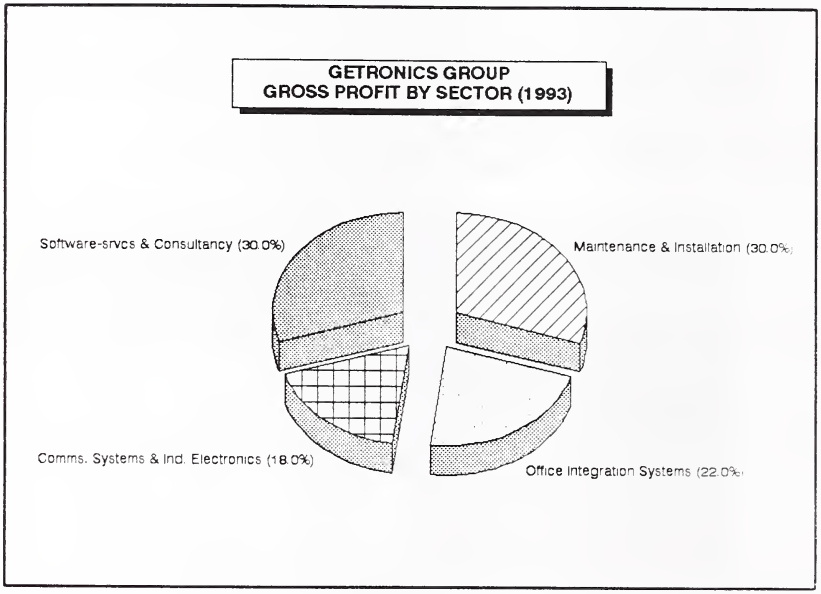

GETRONICS GROUP
GROSS PROFIT BY SECTOR (1993)
Software-srvcs & Consultancy (30.0%)
Maintenance & Installation (30.0%)
Comms. Systems & Ind. Electronics (18.0%)
Office Integration Systems (22.0%)

Table 3. Systems and Services - Revenues and Gross Profits

GETRONICS - DETAILS BY PRODUCTS/SERVICES (Dfl M)				
	1992		1993	
	REVENUE	G.PROFIT	REVENUE	G. PROFIT
SYSTEMS	575	144	688	147
SERVICES	451	337	614	419

SWOT Analysis

Strengths:

- A sizeable presence in the independent marketplace in most of the countries it operates in and the market leader in Benelux.
- Its breadth of skill and expertise in the desktop area is unmatched by other TPMs.
- Good reputation in its traditional marketplaces, e.g. The Netherlands and the government sector.
- Long-term contracts with some major customers, e.g. ABN-AMRO Bank and Shell Oil.
- Has a good reputation in the industry, unlike some of its competitors.
- Part of the large and financially secure Getronics NV Group.
- Has achieved ISO 9001 accreditation for both service delivery and service methods and design.
- Has signed several Co-operation Agreements with leading service suppliers, i.e. Sorbus and ITS.
- Has maintained profit growth under difficult market conditions.

Weaknesses

- Little presence in the UK, the most developed of the markets for Third Party Maintenance.
- Much of its growth has been by acquisition; can this be maintained?
- Little expertise in the mainframe Data Centre environment.

Opportunities

- Has signed Co-operation Agreements with Sorbus and ITS; could these herald new opportunities?
- To expand its market share in many of the countries already served, particularly Germany.

- Growing prospects for disaster recovery services.

- To expand geographically, either alone or in partnership with other companies.

- Expansion opportunities for the European Repair Centres, either for OEMs or for end-users directly.

Threats

- It is still predominantly a Netherlands operation, with little expertise and staff in many other countries.

- The TPM market is still very price competitive. The computer manufacturers, especially Digital, IBM and ICL (in partnership with Sorbus) are targeting this marketplace aggressively and maintenance prices continue to decline.

- Warranties terms are increasing - 3 years is becoming commonplace for PCs and even 5 years or its life-time for some items.

- As hardware prices on PCs and related products decline, yet costs of maintenance increase, e.g. travel and energy, customers may be tempted to forego maintenance contracts and scrap unserviceable products.

SORBUS EUROPE

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Thames Street
Hampton
Middlesex
TW12 2EW
United Kingdom

Tel: +44 81 941 9005
Fax: +44 81 941 9018

Registered Office
as European Headquarters

Corporate Structure

Sorbus Europe is a private company 51% owned by International Computers Limited (ICL) and 49% owned by Bell Atlantic Customer Services International Limited.

As at June 1994 the board comprised:

- Julie Dobson - President, Bell Atlantic Business Systems Services (Chairman and casting vote)
- Paul Whitwam - ICL Group Executive Director Europe
- John Gardner - Chairman ICL (UK) Limited
- Lee Tate - Managing Director, Sorbus Europe
- John McGoldrick - Vice President and General Manager, Sorbus Europe
- Nigel Hartnell - ICL
- Tom Fitzpatrick - Bell Atlantic Business Systems Services

The previous chairman, Tom Vassiliades, also previously president of Bell Atlantic Business Systems Services, retired in March 1993.

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Sorbus Europe has operating units in Austria, Finland, France, Germany, Ireland, Italy, the Netherlands, Switzerland, Sweden and the United Kingdom. Sorbus UK has limited company status, and is also responsible for managing activities in Ireland. Sorbus Germany similarly has intermediate responsibility for activities in Switzerland and Austria. Full details are given in the operations section below.

Through its relationship with Bell Atlantic Business Systems Services, Sorbus is able to collaborate with Bell Atlantic outside Europe, and has actively done so in, for example, Australia.

It is understood that with the exception of Sorbus UK, which is largely responsible for managing its own affairs, Sorbus Europe maintains direct involvement in the management of its operating units, providing for example corporate sales and marketing support to local sales teams. Sorbus Europe also provides strategic direction, financial planning, logistics and management information systems to all operating units including the UK.

History and Relationships

Sorbus Europe was originally the European arm of Sorbus Inc. of the US, the world's largest provider of independent maintenance services. It was acquired along with its parent by Bell Atlantic in 1985 to form part of Bell Atlantic Business Systems Services. In 1988, Sorbus Inc in its turn acquired Bell Technical Services (a largely European operation) from Bell Canada Enterprises, which brought into the fold a number of other independent maintenance companies:

- Maintainer General Computer Systems Ltd
- Cable & Wireless UK Services Ltd
- Eurotech BV
- Eurotechnica SA
- Eurotech Italia
- Dataway
- Dialog Computer Services.

These have been consolidated within Sorbus Europe and all now trade under the Sorbus name. The ICL/Bell Atlantic 'joint venture' was established in July 1991. More recently, ICL's customer services organisations in Switzerland, Italy and Austria have also been consolidated within Sorbus Europe, a trend which looks set to be repeated in other European countries.

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Sorbus Europe describes its relationships with both Bell Atlantic and ICL as 'arms length' and continues to claim independent status, developing its business plans in-house and seeking the views of its parents only in terms of defining market opportunity. ICL is however strongly represented on its board, and is actively looking for synergy with its own customer service operations. There has been considerable exchange of customer service personnel between Sorbus and ICL in Europe, and some Bell Atlantic personnel have also recently been moved into Sorbus Europe.

Sorbus has also benefited from the relationship with ICL through, for example, becoming the service provider to ICL-owned PC and software distributor Technology plc; through access to the Scandinavian market, with new offices in Finland and Sweden, following ICL's acquisition of Nokia Data; and through access to ICL's greater networking and UNIX skills. Success in one obvious area of collaboration, the maintenance of non-ICL equipment in the ICL user base, proved patchy at first, particularly in the UK. However, revenues from ICL base today represent only 25% of Sorbus UK revenues.

Sorbus also on occasion finds itself in potential competition with other parts of the ICL empire. However, since ICL has a clear intention to cover the full computing services spectrum through its Total Managed Services strategy, of which Sorbus is a part, it must also be willing to tolerate some internal competition where direct and subsidiary activities overlap if this extends its coverage in the marketplace.

Sorbus Europe draws upon its relationship with Bell Atlantic for collaborative research activities particularly in the areas of remote diagnostics and remote support capability, for skills and training, for software support and for its account management systems.

As well as providing maintenance for IBM and Digital equipment throughout Europe, Sorbus also provides maintenance services for a substantial number of OEM manufacturers. These are itemised on a country by country basis in the operations section below.

Sorbus Europe is seeking to expand its capability in the areas of operating and applications software and systems integration through the development of marketing agreements and strategic alliances. Sorbus also plans to use partnering to extend its offerings in the areas of disaster recovery, education and training and outsourcing. Over fifty relationships were put in place in Europe during 1992, including relationships with all of the leading outsourcing companies (EDS, CSC, Itnet, Sema, Andersens, Hoskyns, Data Sciences, Telecom Capita). Marketing agreements include an agreement with Getronics in Benelux, under the terms of which the two companies are targeting datacentre and systems business (Sorbus) and PC business (Getronics).

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Sorbus Europe claims to have over 4,000 customers in total, suggesting that many of these are likely to be small in revenue terms. Key customers contributing the bulk of revenues are itemised on a country by country basis in the operations section below.

Financial and Market Performance

EUROPEAN REVENUES - $ MILLIONS

Country	1991	1992*	1993
Austria	1	2	3
Finland	-	-	-
France	16	20	25
Germany	14	16	19
Ireland	1	2	3
Italy	5	6	8
Netherlands	-	-	-
Switzerland	3	5	6
United Kingdom	32	49	56
TOTAL	**72**	**100**	**120**

** 13-month year due to move of year end to 31.12 from 30.11*

Source: Sorbus/INPUT estimates

Sorbus claims 14% growth across Europe in 1991, 38% in 1992 following the Bell Atlantic/ICL 'joint venture', and 20% in 1993. Since Sorbus Europe does not report independently of ICL, actual profitability is harder to establish. For example, although Sorbus UK announced operating profits of £2.5 million in 1991 and £3.8 million in 1992, Companies House data shows a net loss before tax of £0.7 million for 1991, suggesting some large exceptional items. Historic data as a whole indicates that overall profitability for Sorbus Europe prior to 1990 proved elusive. Although this has now gradually been achieved, individual country performances continue to vary and Sorbus Europe is seeking and expecting a higher return in the future.

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This is not however intended to be at the expense of investment in geographic expansion or increased service capability. As the engineer : staff ratios in the operations section below show, these are lower than heavy focus on profitability would suggest, particularly in countries such as Germany and Italy, but are a function of the high level of development activity in for example software support, networking, and broadening of local product support expertise taking place at present. Future recruitment policy is expected to improve these ratios.

Sorbus Europe is seeking to reduce its dependence upon the hardware maintenance market, which is in overall decline, and to increase the proportion of revenue derived from other services such as consultancy and software and network support. Maintenance revenues have fallen from 95% of the total in 1990, to 85% in 1991, 75% in 1992 and 70% in 1993.

Approximate market shares in the multi-vendor maintenance sector are as follows:

COUNTRY	1992 % MARKET SHARE
Austria	9
Finland	0
France	5
Germany	7
Ireland	25
Italy	4
Netherlands	0
Switzerland	9
United Kingdom	7
TOTAL W. EUROPE	**5**

Source: INPUT estimates

Geographic expansion is achieved by seeking initial large, fixed-site contracts as a means of funding the basic infrastructure, and then adding distributed support capability - principally by purchasing existing local capacity.

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Services and Strategy

Hardware maintenance services are provided on a range of system types from PC's to mainframes, but are principally focussed upon IBM and Digital equipment and a series of support contracts for OEM PC suppliers and distributors. Sorbus also supports networks for major retailers such as Marks & Spencer in the UK. Sorbus has made significant progress in the IBM mainframe market by targeting IBM 3090 sites in the UK, Germany and France, and last year helped Bell Atlantic to win a contract to support the Westpac IBM datacentre in Australia. It also, as mentioned above, targets non-ICL equipment in the ICL user base reciprocally with ICL's Customer Service Division.

Sorbus Europe has joint ventures with Fujitsu in Australia and New Zealand, and is actively seeking entry into South Africa, India, Singapore and Hong Kong in partnership with either Fujitsu or ICL.

The fastest growing areas of business for Sorbus are IBM datacentres (250% growth in 1993) and professional and software services.

The full portfolio of services provided is as follows:

- Environmental Planning and Preparation
- Equipment Selection Advice
- Pre-delivery Inspection and Installation
- Maintenance
- Help Desk Provision
- Asset Management and Management Information
- Disaster Recovery
- Network Design
- Network Management
- LAN & WAN Support
- Structured Cabling
- Wire Management
- Manufacturer Support

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- 4th Party Repairs
- Warehousing
- Manufacturer Pre-delivery Inspection and Installation

The product groups principally supported are:

IBM MAINFRAME	IBM GSD	IBM 3270
4300	System 36	Terminals
308x	System 38	Controllers
3090	AS400	Printers
DIGITAL	**PC'S**	**PRINTERS**
PDP	IBM	Line
VAX	Compaq	Matrix
Microvax	Dell	Laser
Plug compat.	Apple	
	Toshiba	
	AST	
	ACT	
COMMUNICATIONS	**FINANCIAL MARKETS**	
LANs	QUICK	
Cray Electronics	TOPIC	
Northern Telecom		

Other PC manufacturers are supported on a country by country basis (see the operations section below).

A major thrust for Sorbus will be the extension of its existing remote diagnostic and support capabilities into the fields of software and network support. Bell Atlantic was the founder of, and ICL is a partner in, an alliance also involving Hewlett Packard, Microsoft and Sun set up to promote the development of international standards for service and support information in distributed and open computing environments. Known as DSIS (Distributed Support Information Standards Group), the group promotes non-proprietary information standards for computers, operating systems, applications and users, designed to facilitate monitoring and remedial activities in mixed system environments.

Sorbus Europe sees a general trend in which engineering productivity is extended through investment in systems. It believes that the increasing penetration of networked and open systems represents a major opportunity for companies able to develop appropriate and cost effective remote support capabilities embracing hardware, software and networks. Open systems in particular are likely to force the breakdown of the technical and commercial barriers that have made independent maintenance in some proprietary environments uneconomic.

Sorbus Europe recognises that it must find new sources of revenue and means of improving margins on maintenance services if it is to thrive in a market in

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which overall hardware maintenance spend is in decline. Its strategy is based on extending geographic cover and service capability, whilst exploiting technology to leverage productivity and profitability.

Operations

Sorbus Europe is organised on a country basis, with local operating, sales and workshop capability. The development of its non-maintenance services is being spearheaded corporately by four senior people across Europe, with delivery of these services being through the normal operating units, but with distinct financial monitoring.

Details of country by country operations are as follows.

AUSTRIA

Head office:	Diefenbachgasse 35 A-1150 Wien
Tel:	+43 222 89 103 0
Fax:	+43 222 89 103 14
Locations:	3
No of staff:	12
Engineers:	8
Geographic cover:	Full
OEM's:	Dell Discom Abeco AST NeXT Haak Quick Advanced Logic Research
Customers:	Zumtubel Rubbermaid

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FINLAND

Head office:	Kutomotie 18 SF-00380 Helsinki
Tel:	+358 0 561 684
No of staff:	12
Engineers:	10
Customers:	Finnish PTT Finnish Broadcasting Corporation
	Opened in 1992

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FRANCE

Head office:	Parc du Colombier 16 rue Jules-Saulnier BP 223 93523 Saint-Denis
Tel:	+33 1 49 33 47 47
Fax:	+33 1 48 09 95 39
Locations:	19
No of staff:	325
Engineers:	218
Geographic coverage:	Full
OEM's:	IBM Apple Sharp Zenith Tandon Toshiba NeXT Victor Compaq Bull HP Commodore IPC
Products supported:	Micro - Apple Compaq IBM Dell Daewoo Tandon Wyse Mini - IBM & Digital Mainframe - IBM
Customers	Renault SNCF Societe Generale

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GERMANY

Head office:	Willestatter Strasse 13 Postfach 290354 D 4000 Dusseldorf 11
Tel	+49 211 52 61 01
Fax:	+49 211 52 61 261
Locations:	17
No of staff:	210
Engineers:	96
Geographic cover	Full
OEM's:	Dell Soldan Tandberg Wyse Abeco Stoll Facit Metrologie Computer 2000 Biosys
Customers:	EDV - Leiter Intersport, Boehringer RRZMN Stuttgart

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IRELAND

Main office:	Unidare Industrial Estate Jamestown Road Finglas Dublin 11
Tel:	+353 1 8640330
Fax:	+353 1 8640472
Locations:	3
No of staff:	15
Engineers:	9
Coverage:	Republic of Ireland and Northern Ireland
Products supported:	IBM DEC large and mid-range systems IBM Dell Compaq Apple and other compatible desktop systems Cashwise,Sharp point of sale.

ITALY

Head office:	Centro Direzionale Milanofiori Strada 7 - Palazzo T3 20089 Rozzano MI
Tel:	+39 2 8227 01
Fax:	+39 2 8254 368
Locations:	13
No of staff:	115
Engineers:	55
Geographic cover:	Full
OEM's:Dell	AST Oki Kodak Triumph Adler Diesse Shop PRAIM NeXT
Customers:	Fininvest National Rail Network

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NETHERLANDS

Head Office:	Carnegielaan 14 2517 KH Den Haag
Tel:	+31 70 361 7308
Fax:	+31 70 392 4971
Locations:	1
No of staff:	3
Engineers:	3
Opened:	1992

SWITZERLAND

Head office:	Postfach - Bosch 41 CH-6331 Hunenburg/Zug
Tel:	+41 42 38 22 88
Fax:	+41 42 36 29 62
Locations:	5
No of staff:	30
Engineers:	19
Geographic cover:	Full
OEM's:	as Austria
Customers:	Zurich Versicherungen SchweizerischeKreditanstalt

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UNITED KINGDOM

Head office:	Sussex House 2 Plane Tree Crescent Feltham Middlesex TW13 7HH
Tel:	+44 81 893 2000
Fax:	+44 81 898 5250
Locations:	13
No of staff:	640
Engineers:	415
Geographic cover:	Full
OEM's:	Dell NeXT
Customers:	Allied Breweries ASDA British Aerospace, British Gas Citicorp Data Sciences GRE Next Retail Marks & Spencer Sun Alliance Swan Hunter London Stock Exchange Lloyd's Bank

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Contractual Arrangements

Sorbus Europe's normal approach is to establish a fixed price contract value based on the equipment under contract and service parameters, which may relate to response times, fix times or system availability.

A key element both pre-contractually and post-contractually is Sorbus' use of information systems firstly to model and price tenders, then to underpin the contract documentation, and finally to provide operating and management information to both Sorbus and the customer.

ISIS, the International Support Information System, is a database of all equipment ever maintained by Sorbus, which is updated dynamically through returns made by engineers in the field. Although initial contract costings are based on the anticipated consumption of resources, rather than built up on an item by item basis, ISIS contains an internal price list which is brought into play when Sorbus audits, badges and logs onto the database each item of equipment to be maintained in a new customer as part of the contractual process. This log is used to both finalise the contract price and becomes the initial equipment schedule within the contract itself.

ISIS can also be used to support paid site audits which include equipment outside the scope of the support contract, and as a planning tool in establishing the most appropriate levels of cover. As a management tool its principal value is in providing inventory management support and accurate reporting of relative failure rates across different equipment types, as well as identifying system upgrade requirements and migration paths.

Customised ISIS reports are provided to all corporate customers, and some 40-50%, mainly large data centres, have taken up the option of having their own direct access to ISIS data through on-site terminals.

Sorbus has numerous other software packages and tools, such as some for logging and managing software releases, that support both its operational and business development activities. The preparation of a detailed systems proposal is a key part of its sales approach to larger customers.

Competitive Positioning

Sorbus Europe sees its principal competition as it moves forward as coming from organisations such as Andersen Consulting and CGS, and from the hardware vendors, rather than from the other independent maintenance companies. Where competition from these latter is proving intense is in the maintenance of PC's, desktops and low end networks, where even existing contracts are having to be discounted in order to retain them.

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Sorbus Europe perceives its key strength to be its relationships with Bell Atlantic and ICL, which give it access to R & D capability in the field of technology convergence (voice, data and image); to a substantial systems support infrastructure in the case of Bell Atlantic, and to Unix and open systems knowledge in the case of ICL. Its perceived vendor independence and strong focus on formal quality approaches such as BS5750 (ISO 9000) are also important. Thus Sorbus would define its key competitive differentiators as:

- Use of leading edge technology to provide remote support capability
- Use of information systems to underpin all aspects of the business
- Marketing agreements and alliances which extend the skills base
- Globalisation (coverage of 70 countries, and targeting multinational accounts with common global pricing)
- Access to Bell Atlantic and ICL R & D
- Focus on quality standards.

Acknowledged areas of weakness have been a lack of consulting skills at the business and process design level, and a real breadth of networking understanding and capability outside specific user configurations. These are being addressed through the DSIS and partnering initiatives discussed above

INPUT's Assessment

Sorbus Europe has clearly been boosted by the ICL/Bell Atlantic joint venture. However, there are suggestions that ICL in particular is looking for greater leverage within its own customer base, as well as a mechanism for competitive attack elsewhere, which may influence Sorbus' future direction.

Sorbus is committed to developing remote support capabilities, and investment in leading edge service technology. This, coupled with the determination to globalise its service infrastructure, is likely to win Sorbus competitive advantage, particularly in terms of knocking out smaller local competition at the country level.

Sorbus is one of the new (but small) breed of service companies who are fast developing away from the traditional remedial service business, and are expanding their capabilities to encompass full lifecycle services. As users are increasingly demanding tailored service solutions, this appears to be a winning strategy. However, as Sorbus move up the value-chain, they are increasingly likely to encounter new competition in the form of the big outsourcing and professional service companies. Sorbus may well have anticipated this trend.

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having establishing key alliances with many of the leading players in this field.

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February 1994

Computacenter — A Leading UK Desktop Services Vendor

The desktop services market is receiving increasing attention from a wide range of vendors. Professional services vendors such as Hoskyns and EDS have entered this market, as have equipment vendors such as Digital, Olivetti, Hewlett-Packard and IBM.

However, over the last two years a number of major PC dealers have also started to emerge as key players in the desktop services market. In the UK, Computacenter has established itself as the leading PC dealer in this market, with 1993 revenues of approximately $15m.

Three of the major factors that have contributed to Computacenter's initial success are:

- The formation of a separate outsourcing group within the company
- A focus on merchant banks
- The company's breadth of geographic and technical support.

Formation of Specialist Outsourcing Group

Computacenter remains an organisation whose focus is centred on product sales to corporate accounts. Accordingly, Computacenter has developed a culture based around its aggressive sales force, who are primarily compensated on a commission basis. It can be difficult for organisations such as this to adopt the more consultative sales style that is appropriate for selling services. Computacenter also faces the challenge that the major PC dealers are well-known for their product supply capabilities but are typically regarded as having comparatively low levels of services capability.

Nonetheless, Computacenter has recognised the need to target services' revenues and has established a separate business unit to target desktop services outsourcing.

This business unit is called the Comprehensive On-Site Services (COSS) unit. The unit employs 200 personnel including ten contract managers and is now estimated to have desktop services revenues

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of approximately $15 million out of total business unit revenues of $30 million.

Computacenter's 1993 revenues are summarised in Exhibit 1.

Exhibit 1

Revenues: 1993

Business Activity	Revenues ($M)
All activities	470
Services	75
Comprehensive On-Site Services	30

Source: Computacenter

However, there remains a cultural divide between the COSS unit and Computacenter's product-oriented sales force. As a result, COSS acts largely independently from the mainstream sales force in generating and pursuing its own sales leads.

Focus on Merchant Banks

While cost reduction remains a significant driving force behind desktop services outsourcing, one of the keys to identifying desktop services outsourcing prospects is the identification of organisations for whom client/server or LAN-based systems have become critical to the organisation's success. Organisations operating in the financial markets based around the City of London often meet this criterion. Computacenter estimates that such organisations are five years ahead of typical industrial companies in their use, and dependence upon, client/server technology.

This particularly applies to the merchant banks, which are heavily dependent upon the availability and response times of their trading systems. Computacenter estimates that it has an established presence in this segment of the market having supplied products to all the leading merchant banks. This high level of awareness assists COSS in marketing its outsourcing services into these organisations and the unit has contracts with three major merchant banks, namely:

- SG Warburg
- Lehmann Brothers
- Morgan Stanley.

Other clients in the financial services sector include:

- UBS
- Westpac.

Breadth of Geographic and Technical Support

Overall the COSS unit has approximately ten accounts in the UK. Outside the City of London, the organisation's clients include:

- TSB
- Shell
- Bass
- United Distillers.

Key factors in winning these contracts have been Computacenter's wide geographic coverage within the UK and the company's breadth of specialist technical expertise.

While most desktop services vendors are endeavouring to reduce the cost of service by centralising support wherever possible, local access to suppliers still remains important to their clients. Indeed one of the major factors driving organisations to outsource their desktop services has been the difficulty they

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have experienced in providing consistent levels of support across large branch networks. Accordingly, one of the key vendor selection criteria used by organisations such as TSB and United Distillers has been the geographic coverage of the potential supplier. TSB has an extensive retail banking network in the UK and United Distillers required support for 1700 PC users located across 65 sites.

The other major factor in Computacenter's favour is its breadth of technical knowledge in PCs and open systems technologies. Computacenter supports all aspects of their IT infrastructures, with the exception of mainframes and WANs, for both TSB and SG Warburg.

COSS perceives that one of its key strengths lies in being close to the technology and understanding the possible pitfalls in the use and linkage of a wide range of software products. The help-desk is seen as the key activity in which Computacenter has to provide a high standard of service.

In addition, Computacenter will provide United Distillers, for example, with processing of equipment orders, inventory management, installation services, on-site maintenance, and project support. So far, Computacenter has experienced comparatively low levels of demand for product procurement and leasing services. However, COSS expects that the demand for these types of service will steadily increase.

The duration of Computacenter's desktop services outsourcing contracts are typically shorter than the market average for platform operations and applications operations contracts. The company's contracts with TSB and United Distillers are both for two years, compared to the market average of four years for systems operations contracts.

As in traditional outsourcing contracts, staff have been transferred from the client to Computacenter. TSB transferred 25 support staff to Computacenter while SG Warburg transferred 50 personnel.

Computacenter would like to form alliances with outsourcing vendors with mainframe and proprietary systems management expertise to enable the company to target major outsourcing deals. However, so far, the company has been limited to working with other outsourcing vendors on a tactical account by account basis.

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December 1994

Blue Chip Customer Engineering Limited

Blue Chip Customer Engineering Limited (Blue Chip) has persisted in its focus on the IBM mid-range maintenance sector, although it now offers service on PCs and associated peripherals. Maintenance services are provided on most of the mid-range IBM equipment from System 3x, AS/400 through to RS/6000 systems.

However, many customers are opting for maintenance from a single source for all of their computer equipment, and not considering companies for maintenance of individual ranges of equipment.

Background

Blue Chip Customer Engineering Limited (Blue Chip) is a private limited company founded in 1987 by the current Managing Director and major shareholder Brian Meredith, to provide third party maintenance (TPM) services.

Blue Chip has a wholly-owned subsidiary operation in Portugal and is in the process of setting up another subsidiary operation in Sri Lanka.

The company has its origins in the acquisition by Granada of several Third Party Maintenance (TPM) companies in the late 1980s. Brian Meredith, formerly at Mainstay Computer Cover which was one of the acquisitions, moved from Granada Computer Services and set up Blue Chip.

In addition to providing maintenance services it also sells new and second-user equipment and upgrades. Approximately half of its revenues are earned from these product sales. The company organisational structure is shown in Exhibit 1.

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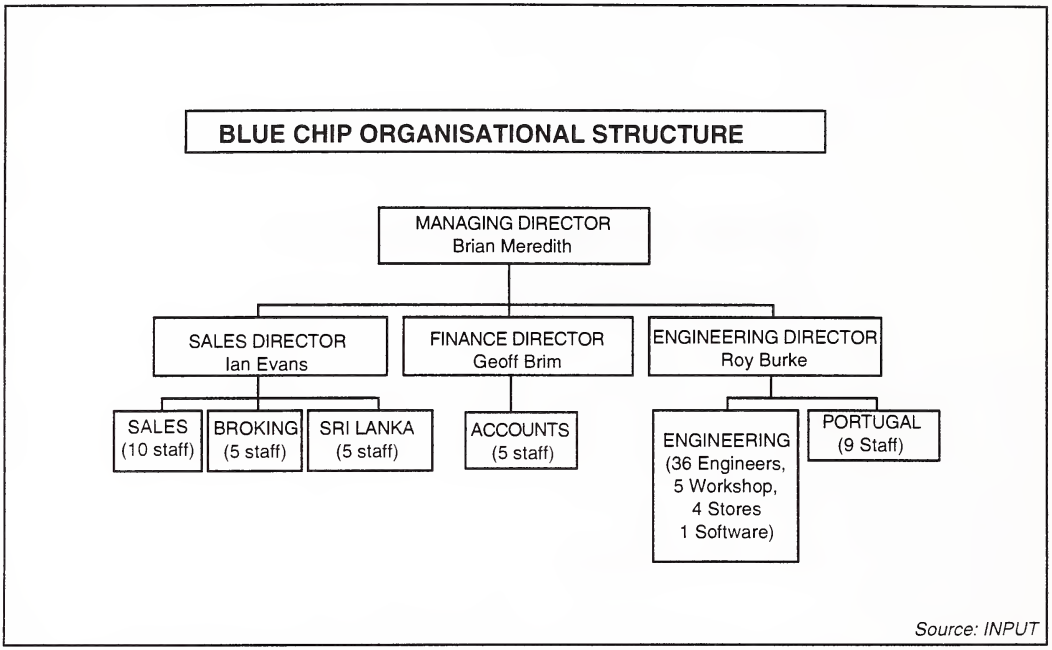
Exhibit 1

Blue Chip Customer Engineering - Organisational Structure



Source: INPUT

Services and Strategy

Blue Chip offers traditional hardware maintenance contracts on IBM mid-range systems and on most PCs and their associated peripherals.

Standard service is available between 0800 - 1900, Monday to Friday, although critical items may be covered outside these hours. All engineers, with the exception of the workshop engineers, are home-based and contacted via pagers. The computerised call-control system determines which engineer to call and the source of the nearest spares which are shipped to site by couriers or taxis, as appropriate.

Differences from standard hardware maintenance contracts are:

- Unlike most, if not all, of its rival TPM companies, Blue Chip does not offer fixed-term contracts, but customers may simply terminate at 3 months notice at any time. Blue Chip believes this flexibility does not *trap* the customers, and quotes retention rates of 98%, as contracts do not come up for annual renewal and possible renegotiation

- Out of hours coverage is free of charge and the customer is asked only to call for assistance if the situation is specifically critical. Financial penalties are imposed if this is abused

- Disaster recovery services are included free of charge with hardware maintenance contracts.

To provide this latter service, Blue Chip has a disaster recovery centre at its Bedford

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headquarters, fitted out with 4 AS/400 systems, a System 38 and a RS/6000-590 system and associated peripherals including three high speed printers.

Although this service is designed to provide short-term facilities for customers, not long-term disaster recovery capabilities, it is an important source of competitive advantage over much of the TPM competition.

Blue Chip does not offer software support contracts, but employs 1 full-time and 2 part-time contract staff to assist with problems on AIX, OS/400, RPG, Lan Manager and Lan Server software problems.

Its product sales operation provides a useful source of income and offers:

- New and used IBM mid-range equipment, PCS and associated peripherals
- A range of storage devices
- Cabling
- Upgrades.

Financial Performance

As a private limited company, Blue Chip does not have to reveal many financial details. INPUT believes that profits in the current financial year (1993/1994) are expected to be in the order of $375,000 (£250,000) on revenues of $9 million (£6 Million).

These compare with profits of $300,000 (£200,000) on revenues of $7.2 Million (£4.8 Million) in 1992/3.

Future Development

Blue Chip has existing skills in the IBM sector, which is the largest part of the maintenance marketplace, and has a loyal customer base. Blue Chip claims to have approximately 500 customers and a retention rate of 98%.

The management team of Blue Chip has spent many years in the TPM sector, and its Disaster Recovery service and free out-of-hours cover are sources of competitive advantage.

On the other hand, Blue Chip has very limited experience and expertise outside of the IBM mid-range marketplace, no mainframe expertise and little, if any, software expertise.

BlueChip is still a small operation when competing against the large multi-national organisations such as IBM, Granada and Sorbus, with a shortage of capital for expansion, acquisition or high value spares.

The expansion into other geographical areas, building on existing skills and expertise, which it has started in Portugal and Sri Lanka, could stretch its management resources.

There is scope for additional service or product offerings to existing customers. This may have to include charging for some services that are currently provided free of charge.

The maintenance market is increasingly price competitive with pressure from both the TPM companies and from computer manufacturers who have radically altered their pricing, most notably from IBM in the AS/400 arena.

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Additionally many customers are opting for maintenance from a single source for all of their computer equipment, and do not consider companies for maintenance of individual ranges of equipment. These multivendor services represent the movement to *open services* that has followed the shift to *open systems*.

December 1994

IBM UK's Service Plus Ltd Targets Multivendor and Desktop Services

In April 1992, IBM UK formed Service Plus Limited, a dedicated service organisation with strategic objectives to:

- Provide high quality, cost effective multivendor solutions
- Reduce its cost structure by having the flexibility and autonomy of a smaller company
- Grow IBM's multivendor services capability.

Service Plus represents IBM UK's first direct attack on the multivendor services market, the clear intention being to gain market share by leveraging the benefits of IBM's extensive international facilities. Since its launch, Service Plus has quickly established itself as an important player in the UK multivendor market, having won several major contracts including managed desktop contracts for Unilever and BP Chemicals.

The three main strands of the Service Plus portfolio are:

- Maintenance Services, including multivendor maintenance of specialist retail and financial equipment as well as general purpose workstations
- Support Services, including LAN management, recovery services and telecommunications
- Professional Services, including managed desktop services and consultancy.

Broad Multivendor Maintenance Capability

Service Plus equipment maintenance services can be divided into three target sectors: retail, finance and general purpose.

Maintenance of retail EPOS equipment includes terminals, scanners, cashdrawers, printers and peripherals from a variety of manufacturers. Retail customers include Safeway and Texas.

Service Plus provides maintenance to the finance industry via support of automatic teller machines (ATM) manufactured by IBM, NCR and Phillips. Current customers include several major UK building societies and The Royal Bank of Scotland.

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General purpose maintenance capability includes many of the leading workstation manufacturers, including IBM, Compaq, Dell, Elonex, Ambra, Toshiba, Hewlett-Packard and Epson. Under a special agreement, Service Plus provides equipment and software support for Ambra PCs during the warranty and extended warranty periods.

Service Plus also includes the following services within its maintenance portfolio:

- Software management service, including maintenance level checks and associated consultancy services
- Customised installation services
- Equipment relocation services
- Equipment disposal services
- Services associated with the creation of multimedia kiosks (information points or points of sale in unmanned public access areas)
- Cabling and connectivity services for voice, text, data and image.

Support Services Focus on Networks

Service Plus includes the following in its support services portfolio:

- Telecommunication
- Information Network Services
- Recovery Services
- LAN Management

Service Plus is responsible for all of IBM's telephone installations and associated support in the UK, and aims to pass on the benefits of that telecommunications experience as a formal service offering to its customers. This takes the form of general consultancy, helpdesk support and Customer Assistance & Switchboard Group (CASG) services.

Similarly, Service Plus offers Information Network (IN) services based on IBM's own commercial network service. Key elements of this service are Electronic Mail and Electronic Data Interchange (EDI) capabilities.

Recovery Services include disaster contingency planning, data and business recovery and Uninterruptable Power Supply (UPS) services.

Finally, LAN Management services include consultancy, health checks, logical and physical design, systems management and administration design services.

Professional Services Target Desktop Outsourcing

Within its Professional Services portfolio Service Plus offers consultancy, training and user support services (which includes personal and retail systems help desk services). However, the focus of Service Plus's professional services activities is the provision of Managed Desktop Services. Essentially an outsourcing service, Managed Desktop Services offers the following capabilities:

- Procurement
- Environmental services
- Implementation and installation
- Systems management
- Technical support
- Education and training.

By offering *stand-alone* desktop services outsourcing, Service Plus has established a niche within IBM UK, and complements the outsourcing activities of its sister organisation IBM ISSC.

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Both ISSC and Service Plus operate in the desktop services outsourcing market. However, whereas ISSC tends to target wider IT outsourcing requirements (where there is significant transfer of assets and/or personnel from the client's organisation), Service Plus undertakes outsourcing contracts with the following characteristics:

- Minimal transfer of assets or personnel from the client
- Contract solely involves the operation and management of the desktop IT infrastructure
- Comparatively short buying cycle
- Client involvement limited to the IT Director (rather than non-IT executives, as is the case with ISSC).

Whereas ISSC offers outsourcing services encompassing mainframe, proprietary midrange, open systems, WANs and LANs, Service Plus is focused on the desktop, and supports ISSC wherever these capabilities are required within a wider outsourcing contract.

Service Plus recognises the importance of using high levels of automation to reduce the cost of delivering desktop services to its clients. Because of the hidden costs associated with desktop services, it is more difficult to demonstrate service cost reductions to prospective clients in desktop services outsourcing than in the traditional platform operations market. Hence, it is the strategic aim of Service Plus to offer *low cost* desktop outsourcing solutions.

Summary

In establishing Service Plus Ltd., IBM UK has reshaped its customer service organisation in order to win business in the newer service markets, building from the base of its traditional maintenance activities. Service Plus represents IBM's formal entry into the multivendor services market, and while rivals such as Digital and ICL have led the field in multivendor services, IBM is intent on making up ground fast.

A number of recent contract successes suggest that by means of aggressive pricing and the ability to leverage IBM's extensive resources, Service Plus is already making its mark as a major multivendor player. Against competition fom Digital and Computacenter, Service Plus were recently awarded a multinational contract by Unilever for the provision of managed desktop and LAN services. In this case, Service Plus worked closely with IBM's Industrial Solutions Business and IBM Netherlands (Unilever has headquarters in Rotterdam) to develop their bid.

A deal with BP Chemicals for the support of 1200 workstations in four countries also provides further evidence of Service Plus' push into the managed desktop services market.

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December1994

Comma Data Service AS Expands Service Capability

Comma Data Service AS (Comma) has replaced declining revenues in the maintenance of proprietary Norsk Data products by increased revenues from other products. In addition, it has acquired the disk drive repair company Norman Magnetics and grown its repair capabilities.

The company is now expanding its service operation to encompass a wide range of activities, although hardware maintenance forms the greatest part of its operation.

Background

Comma has its origins in one of the success stories of the early 1980s, the minicomputer manufacturer Norsk Data (ND). The company expanded rapidly from its Norwegian base, acquiring office automation supplier Wordplex along the way.

At the end of the decade, in common with several other manufacturers, e.g. Prime, its fortunes plunged as users turned away from its proprietary hardware and migrated towards Open Systems.

In response Norsk Data hived off certain activities, including maintenance, into separate subsidiaries. At the time almost all of its service activities were focused on its own products. In 1991 it sold its maintenance operations in most of mainland Europe to Thomainfor, part of Thomson CSF. The service operation in its heartland, Scandinavia, was retained, as was that in the UK. In addition, the Thomainfor operation in the UK was transferred to a new UK company, ND ServiceTeam Limited, with ownership shared between ND (85%) and Thomson (15%).

The UK operation, initially under the management of Richard Ferr'e (now of Granada) and subsequently with Clive Higgins (formerly of Granada), took the lead in establishing the company as a truly multivendor service operation.

The operations in the other countries followed the UK lead, albeit slowly at first. Several re-organisations and name changes later, the Comma Group has established itself as one of the leading multivendor TPMs in Scandinavia and the UK.

Recent changes include:

- Thomainfor has relinquished its share in the company
- Bull has signed a partnership agreement with Comma, under which it subcontracts hardware

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maintenance in certain regions to Comma and bids jointly on other large-scale projects

- The Sales Director of the successful UK operation, Colin Cook, has moved to Sweden, in an attempt to repeat the growth achieved in the UK.

Services and Strategy

The main aim of the company is to build upon its current expertise and to expand its single-source maintenance contracts. As this is a very price sensitive marketplace, it believes its skills in carrying out resource costing to be a very important source of competitive advantage.

In addition, network services are seen as offering substantial growth potential and the UK operation is leading the way in supporting mainland European operations in this area.

The UK company attained BS 5750 Part 1 quality accreditation in January 1992.

Hardware Maintenance

In the UK, maintenance of its proprietary Norsk Data and Wordplex products accounted for less than 16% of revenues in 1993.

In its transformation into a multivendor maintainer, the company offers maintenance on a range of platforms from mainframes to PCs. In the UK it has been particularly successful in winning large single-source contracts with Central and Local Government and British Telecom. Many of these contracts (especially in the UK) are for relatively long-terms, e.g. 5 or 7 years, allowing it to depreciate stock over a period of 5 years (also relatively long).

Contracts and response times are tailored to individual customer requirements and may include 24 hours by 7 day coverage, if required.

Software and Network Support

Comma can provide support on a variety of software, including:

- Common PC application software, e.g. MS DOS and Windows
- TCP/IP and UNIX
- System software used on the hardware platforms it used to sell, i.e. Norsk Data and Wordplex systems
- Networking software; it claims to be supporting all types of network across Europe.
- Application software developed by Comma itself or by one of the companies it has purchased. In the UK it is specialising in software solutions for Local Government (ND UNI-form) and document imaging.

Network services offered include:

- Integration
- Consultancy and design
- Cabling and installation
- Support and maintenance
- Management
- Training.

Fourth Party Repair

Repair is carried out on a wide range of devices, especially disks. Approximately 10% of staff are stated to be employed in this activity.

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Other Services

In addition to the other services described earlier, the company provides a number of bespoke services to customers under the banner of *Total Service Management*, including:

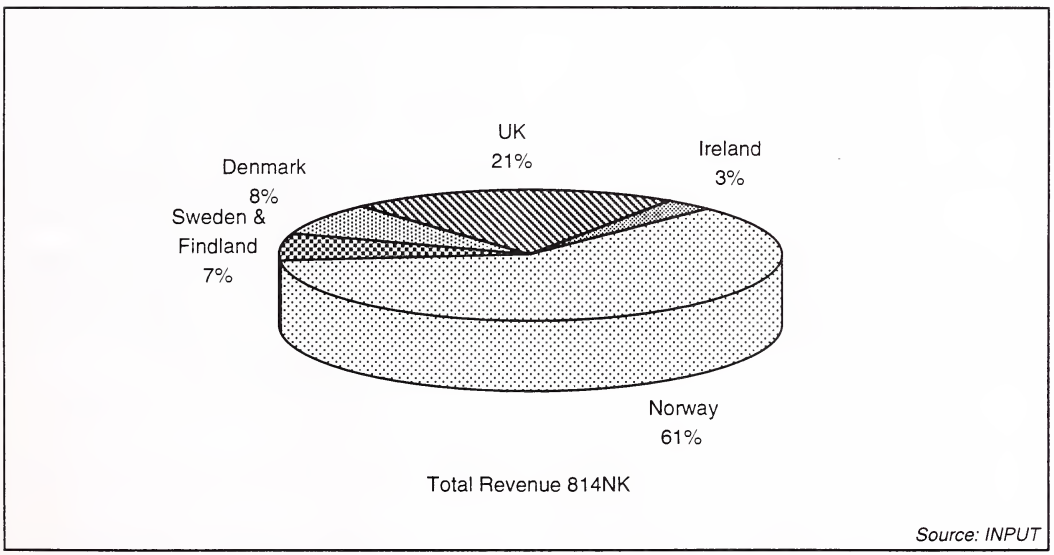
- Computer Management Operations
- Computer Management Operations
- Computer Management Operations
- Customised Solutions
- Help Desk Management
- Software Development
- Disaster Recovery
- Systems Integration
- Desktop Facilities Management.

Financial Performance

With the many changes in the company in recent years, it is difficult to make valid year on year comparisons. Figure 1 shows an analysis of revenues by country for 1993

Exhibit 1

Comma Group–Revenues By Country



Source: INPUT

An Analysis of Comma's Annual Report (14th June 1994) shown in Exhibit 2 indicates the extenet to which the company has migrated from dependence upon maintenance of proprietary products towards an environment where the majority of its revenues are from independent maintenance.

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Exhibit 2

Comma–Sources of Revenues

Source		1991	1992	1993	1994
Proprietary	Scandinavia	89	70	50	NA
	UK	30	21	16	NA
	Group	NA	NA	35	25
Other	Scandinavia	11	30	50	NA
	UK	90	79	84	NA
	Group	NA	NA	65	75

NA = Not Available *Source: INPUT*

Future Development

Comma has a sizeable and growing presence in the independent marketplace in most of the countries it operates in, and is a leader in the Scandinavian market. It has long-term contracts with some major customers, e.g. Central and Local Government in the UK.

However, the UK Central and Local Government markets are most price-sensitive with many of the contracts being awarded by tender to the lowest price maintainer.

The TPM market continues to get ever more competitive. The computer manufacturers, especially Digital, IBM and ICL (in partnership with Sorbus) are now targeting this marketplace aggressively and maintenance prices continue to decline. However, Comma has succeeded in signing a Co-operation Agreement with Bull.

Comma is still burdened with some of the problems from its earlier Norsk Data times, and has already disposed of its operations in many European countries to Thomson CSF. Thus it is still predominantly a UK and Scandinavian operation, with little expertise and staff in many other countries.

With the move of the UK Sales Director to Sweden, the small management team of Comma is spread even more thinly. Its challenges are to expand its market share in many of the countries already served, and to expand geographically, either alone or in partnership with other companies.

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August 1994

Wang UK Reorganises for Multivendor Services

In the last few years Wang has been focused on making the transition from manufacturer of proprietary midrange systems, to a software and services company. The extent of the transition is reflected within Wang UK Limited, where 400 out of a total of 630 employees now work in the Customer Services Organisation (CSO).

This profile reviews Wang UK's development as a services business, and in particular:

- The new organisational structure, and the central role of CSO
- The strategic business units within the organisation
- Wang UK's emphasis on multivendor hardware and software support and networking services.

Customer Services Dominate New Organisation

Wang UK's new organisation is shown in Exhibit 1. The organisation maps onto the demographics of the existing customer base, and resource is allocated geographically.

The key element of the UK organisation is CSO, which services 2,000 customers. CSO's operations are split into 16 geographical branches to provide local service presence and focus.

Of the 400 staff within CSO, 300 are hardware/software engineers and technical support specialists; the latter group is made up of Call Control staff, Logistics staff and Branch and Regional Managers.

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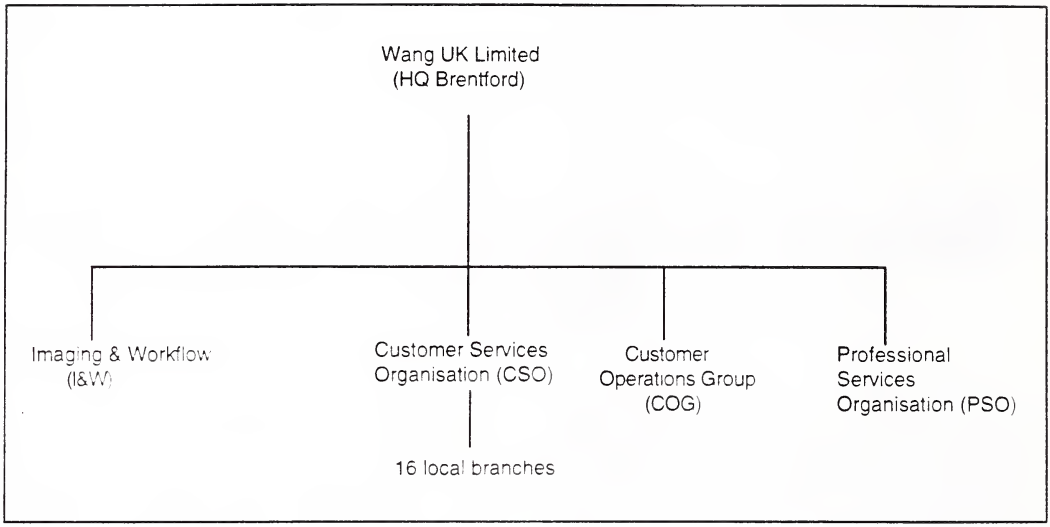
Exhibit 1

Wang UK Organisation



Source: INPUT

CSO offer a total service solution based on a single point of contact for the customer. The emphasis is on providing solutions at every stage of the systems life cycle - development, implementation and support.

CSO's service portfolio is backed up by a fully implemented Quality System (BS EN ISO 9000) against which performance is monitored. Across the UK, Wang offers a 4 hour response contract as standard. Response can be tailored from resident on-site engineer, to a 4 day swap-out covering all supported products.

Wang claims to respond to 95% of all calls within 4 hours, and 99% within 7 hours. When a system is down, average response to site is less than 45 minutes in the London area. From point of call to fix, independent audits assess that 83% of all calls result in complete repair within 6 hours.

Two other groups within Wang UK's new organisation are focused on customer accounts and relations: Imaging & Workflow Group and Customer Operations Group.

Imaging & Workflow Group (I&W) focuses on the specific needs of key customers who are in the process of adopting open systems solutions. I&W defines a specific transition path for each customer, to protect their existing investment in Wang technology, and to ensure optimum return from investment in open systems. Underpinning the work of this group are a number of strategic partnerships with leading manufacturers such as IBM, Hewlett-Packard, Microsoft and Novell.

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Customer Operations Group (COG)
COG is the first-line contact point for customers who need information about Wang's products and services.

All queries made to this group are logged and tracked through to resolution.

Wang's Strategic Businesses

Wang has developed its business strategy in three principal areas:

- LifeCycle Customer Services
- OEM Maintenance Services
- Open Applications Software.

LifeCycle Services include the following:

- Multivendor on-site and warranty support
- Systems integration
- Network management services
- Disaster recovery
- Open application help desk
- Facilities management
- Corporate education.

The key aim of the LifeCycle strategy is to "support customers with services as they develop, implement and require support for new technology". Major international customers include Ford of Europe, C.T. Bowring, Quilter Goodison, and Deutsche Bank.

OEM Maintenance Services is a vital business for Wang UK. The company has invested heavily to provide comprehensive warranty services to key manufacturers such as AST, Samsung, Kyocera and Commodore Business Machines. Key to the OEM support operation has been the development of specialist systems which enable consistent engineer scheduling and tracking throughout the repair process.

As part of its *Open Applications Software* business, Wang has developed a suite of applications combining traditional expertise in office productivity with Wang's leading imaging capability. The result is a suite of platform-independent client/server software tools, which can be delivered to the customer base under the terms of a Wang/Hewlett-Packard partnership agreement.

Wang's Open/image architecture enables customers to implement Document Image Processing (DIP) solutions across a wide range of operating systems and networks.

Wang's Multivendor Approach

Wang have positioned themselves as a one-stop shop for the provision of services covering a wide range of multivendor systems - LANs and servers, desktop systems, specialist workstations, peripherals, communications, midrange systems and even mainframes.

Wang UK claims to be able to support all manufacturers' products "from Altos to Zenith", either directly or via registered subcontractors. This all-encompassing approach defies the weight of evidence which suggests that *specialisation* is the more effective approach to multivendor

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services. However, Wang believes that its core hardware and software service staff, in conjunction with strategic partners from amongst the leading manufacturers and service providers, will together enable it to compete effectively in the multivendor services market.

The key elements of Wang UK's multivendor business are:

- *Multivendor hardware support*, a growth area for the company, with 210 field engineers currently providing UK-wide coverage
- *Multivendor software support*, provided by 35 dedicated support engineers providing back-up support to the engineering base. In addition, there are 20 Product Response Centre staff providing high level support to all software problems which are escalated in the UK and Europe
- *Network support services*, providing a total network management service including technical support for Banyan and Novell operating systems
- *UNIX support services*, delivering service to customers running UNIX on RS/6000 and HP9000 equipment.

Summary

Wang UK intends to promote its image both as a systems integrator and as a provider of multivendor services, a fact which recent announcements of strategic alliances serve to confirm. For instance, in an agreement with server specialist Netframe, Wang will resell all Netframe products including their range of superservers, and provide European-wide support and maintenance.

Wang has also recently entered into a service and reseller agreement with networking product manufacturer Fibronics. Under the agreement, Wang will carry out on-site servicing of Fibronics' equipment in the UK and will resell all its high-speed networking products.

Wang UK's strategy reflects that of the parent company Wang Laboratories, which has emerged from bankruptcy with an aggressive new image as a player in the software and consulting business. An improved balance sheet, a strong technology reputation and key strategic alliances will all serve to help the company in its transition. However,Wang also face steep challenges associated with the move into services, including cultural and competitive pressures. Furthermore, Wang must continue to work hard to preserve its existing customer base, which still accounts for the bulk of the company's revenues.

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Exchange Rates and Inflation Assumptions

Exhibit A-1 shows the exchange rates used for all of INPUT's European forecasts during 1994.

Exhibit A-2 shows the assumptions of changes in inflation by country that will be incorporated into any new forecasts. All growth forecasts in this report include the inflation figures shown this exhibit.

Exhibit A-1

US Dollar and ECU Exchange Rates 1994

Country	Currency	US Dollar	ECU
Europe	$	1.00	0.89
United Kingdom	PS	0.676	0.753
Netherlands	Dfl	1.94	2.17

Source: Financial Times January 1994

Exhibit A-2

Inflation Assumptions 1993 and 1994

Country	Assumption 1993-1998	Assumption 1994-1999	Change
United Kingdom	2	3	1
Netherlands	1.9	2	0.1

Source: OECD December 1993

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